

TC-203SD

1687

Canada Model
USA Model



STEREO CASSETTE DECK

SPECIFICATIONS

Power Requirements:	120 V AC, 60 Hz	LINE IN (binaural) 1 (phono) 2
Power Consumption:	20 W	input impedance: 100 kΩ maximum sensitivity: -22 dB (62 mV)
Track System:	4-track, 2-channel stereo	
Tape Speed:	4.8 cm/s (1 7/8 ips)	
Tape:	SONY tape cassette or equivalent	Output: LINE OUT (phono) 2 load impedance: more than 10 kΩ normal level: 0 dB (0.775 V)/100 kΩ at LINE control maximum
Recording Time: (with C-120 tape cassette)	2 hrs	AC OUTLET 1 300 W, unswitched
Frequency Response:	NORMAL: 20~15,000 Hz Fe-Cr, CrO ₂ : 20~17,000 Hz	Record/playback Head: PF145-3602A2
Record Bias Frequency:	Approx. 100 kHz	Erase Head: EF135-36
Overall Signal-to-Noise Ratio:	DOLBY* NR OFF NORMAL: 52 dB Fe-Cr, CrO ₂ : 54 dB	Semiconductors: 33 transistors, 2 ICs and 22 diodes
Wow and Flutter:	0.08 % (RMS) weighted	Dimensions: 435 (w) x 155 (h) x 320 (d) mm 17 3/16 (w) x 6 1/8 (h) x 12 5/8 (d) inches
Inputs:	MIC (phone) 2 impedance: low maximum sensitivity: -72 dB (0.19 mV)	Weight: 8.5 kg, 18 lb 12 oz

* The word Dolby is the trademark of
Dolby Laboratories, Inc.

SONY
SERVICE MANUAL

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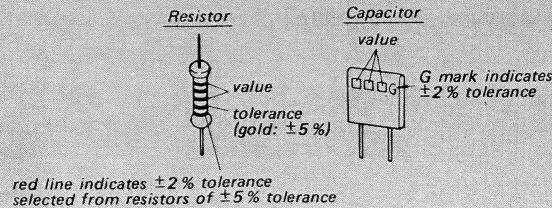
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When ordering replacement parts, use PART NUMBERS listed in Parts Lists
or shown in EXPLODED VIEWS.
Parts List reference numbers should not be used.

CAUTION

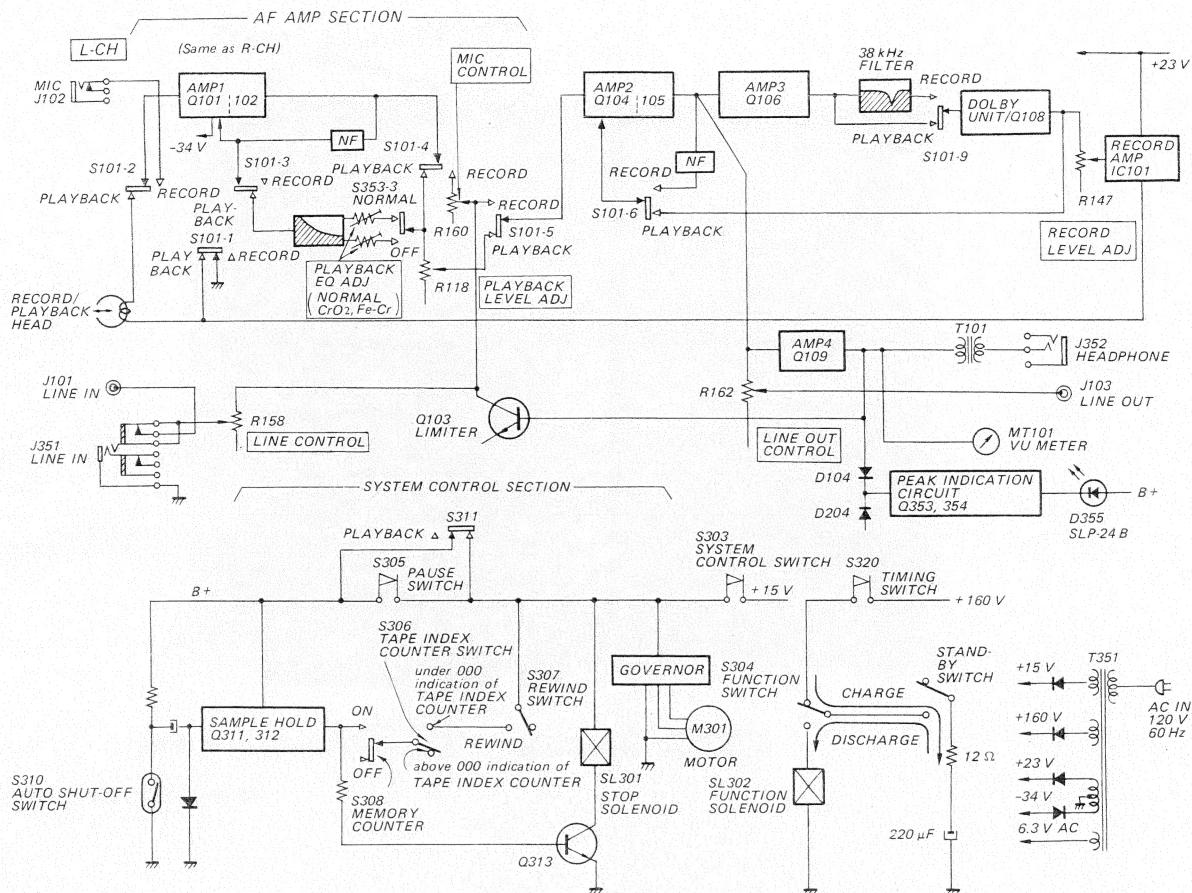
1. Record and playback level adjustments should be carefully made. The levels must be as specified for correct DOLBY circuit operation.
2. When replacing resistors and capacitors needing $\pm 2\%$ tolerance, use only those with red line or G mark, as DOLBY system requires precise circuit operation.

2% Tolerance Identification

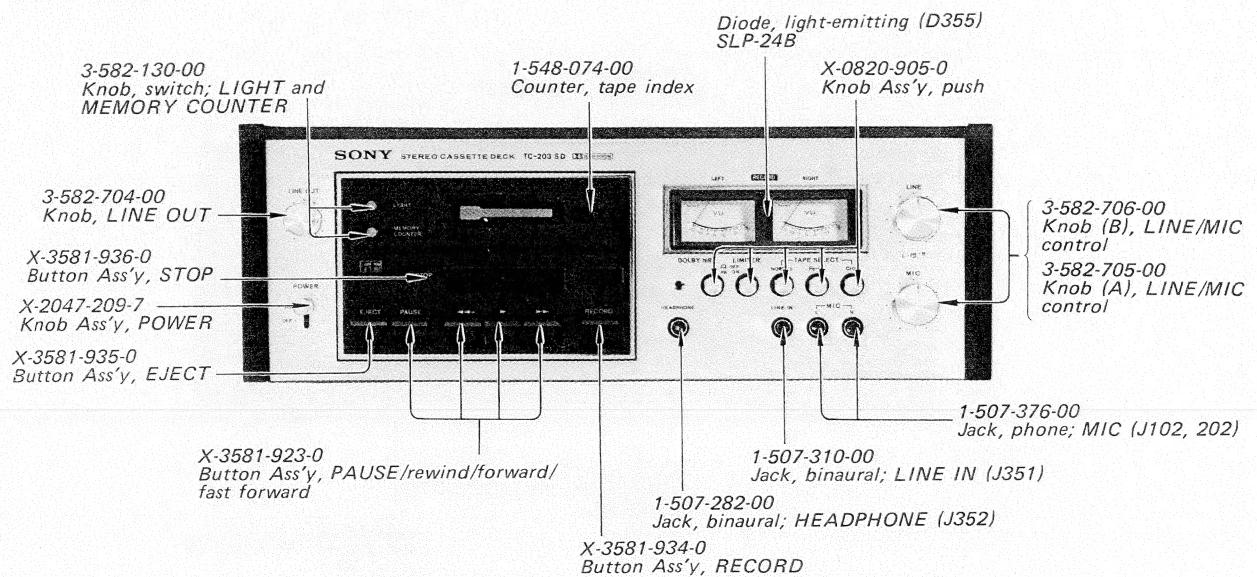


SECTION 1 OUTLINE

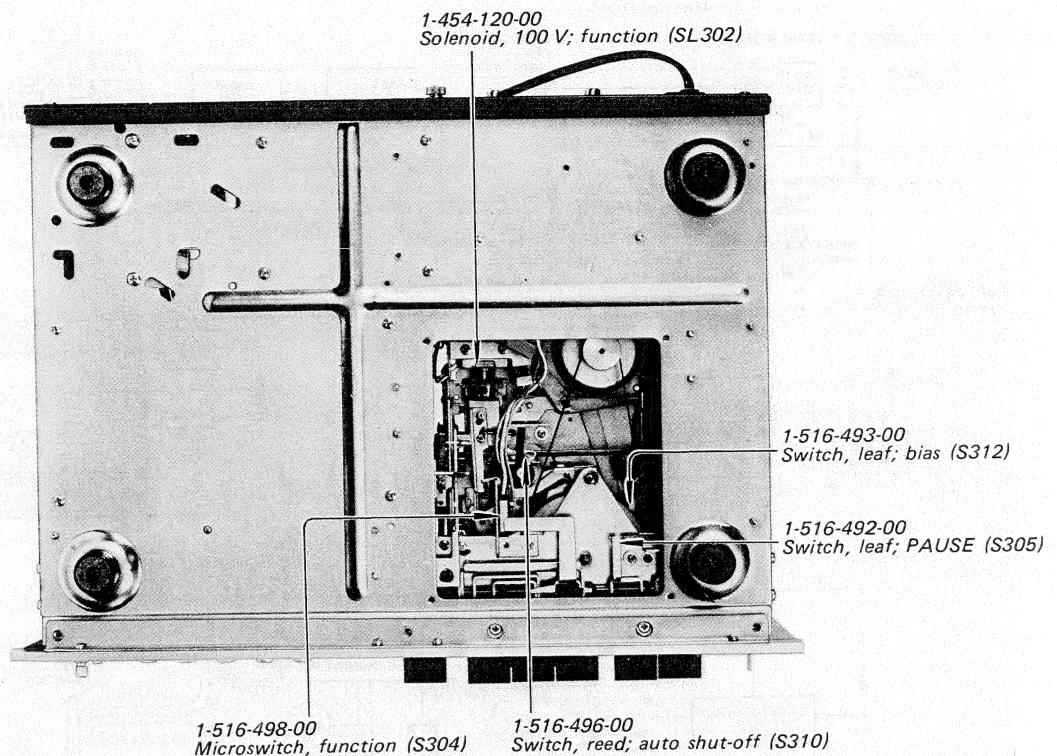
1-1. BLOCK DIAGRAM



1-2. EXTERNAL VIEW (1)

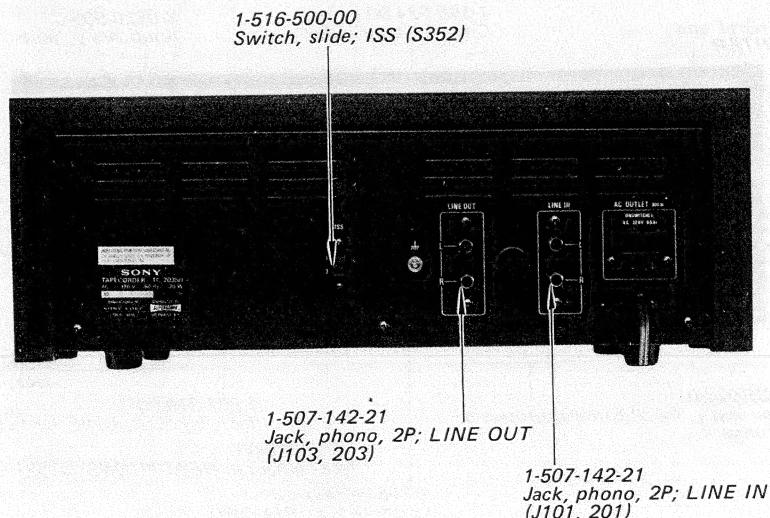


1-3. EXTERNAL VIEW (2)

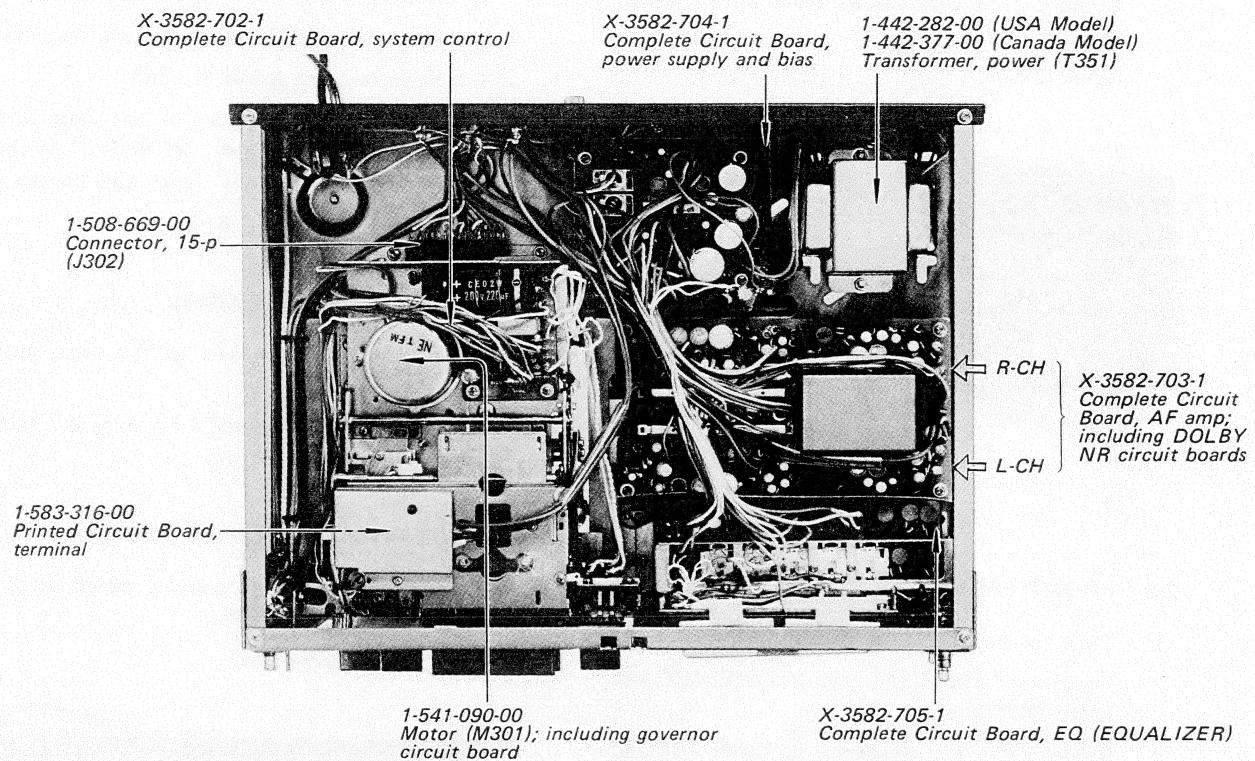


Note: Bottom cover is removed.

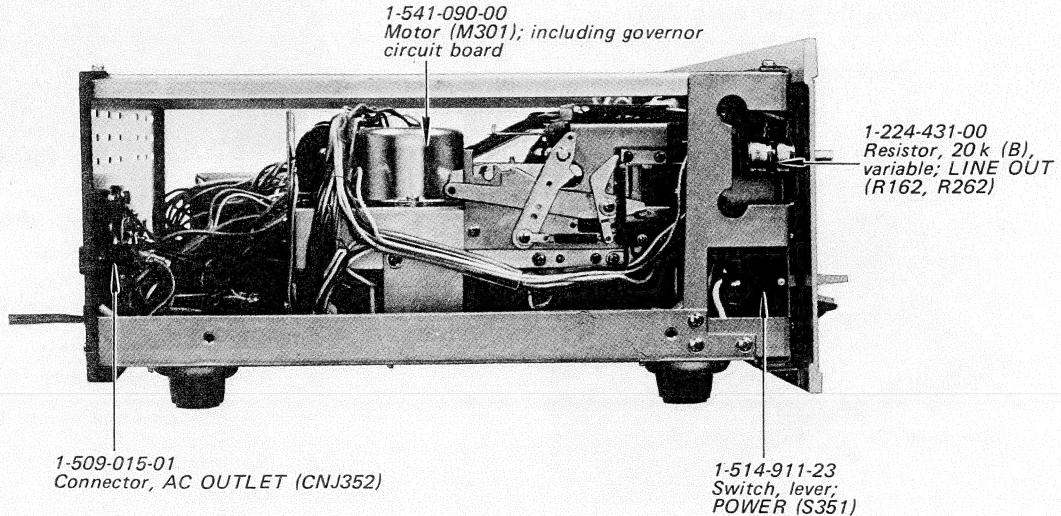
1-4. EXTERNAL VIEW (3)



1-5. INTERNAL VIEW (1)



1-6. INTERNAL VIEW (2)

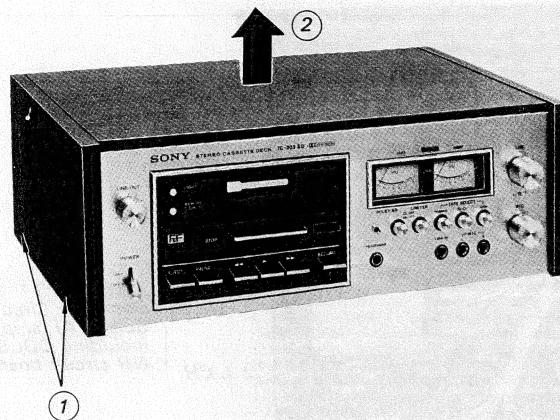


SECTION 2

DISASSEMBLY

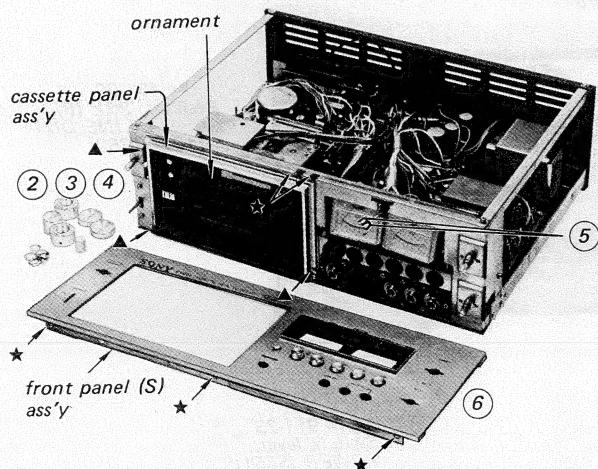
2-1. CASE (S) ASS'Y REMOVAL

1. Remove four case screws from both sides of the case.
2. Remove case.



2-2. FRONT PANEL (S) ASS'Y REMOVAL

1. Turn the unit off.
2. Loosen set screws and remove LINE, MIC and LINE OUT knobs.
3. Remove nuts and washers from LINE, MIC and LINE OUT controls.
4. Pull off POWER knob ass'y.
5. Remove five screws P 3x6.
6. Pull the panel forward about an inch and remove two pin-connectors to light-emitting diode.
7. Remove the panel completely.



Note: ▲ : screw B 2.6x5 (cassette panel ass'y removal)

* : screw P 3x6

2-3. CASSETTE PANEL ASS'Y REMOVAL

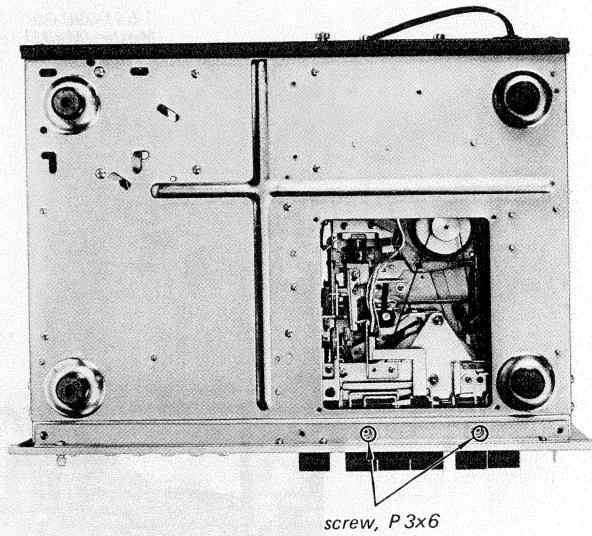
1. Remove front panel as outlined in 2-2 above.
2. Press the LIGHT and MEMORY switches.
3. Remove three screws B 2.6x5.
4. Pull off the top part of the cassette panel. When the LIGHT and MEMORY switches get out of the holes for them, pull up the panel.
5. Carefully take out the panel.

2-4. ORNAMENT REMOVAL

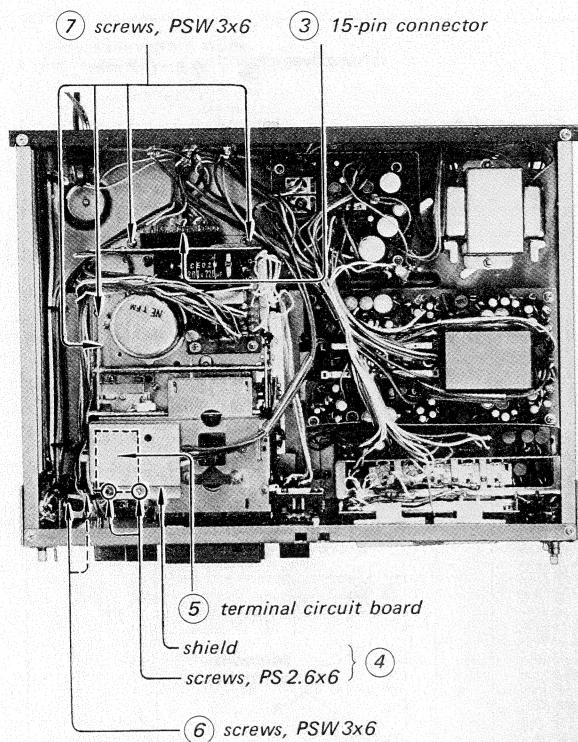
1. Pull off the left part of the ornament with the fingers.
2. Remove the ornament by releasing the right part of the ornament.

2-5. MECHANICAL BLOCK REMOVAL

1. Remove front and cassette panels as outlined in 2-2 and 2-3 above.
2. Remove two screws.



3. Disconnect 15-pin connector from connector circuit board.
4. Remove two screws, PS 2.6x6, and shield.
5. Remove terminal circuit board.
6. Remove two screws PSW 3x6 from front panel chassis.
7. Remove four screws PSW 3x6 from chassis.



8. Remove mechanical block from chassis. Note the relationship between mechanical block and record lever ass'y for the convenience of re-attaching the mechanical block.

SECTION 3

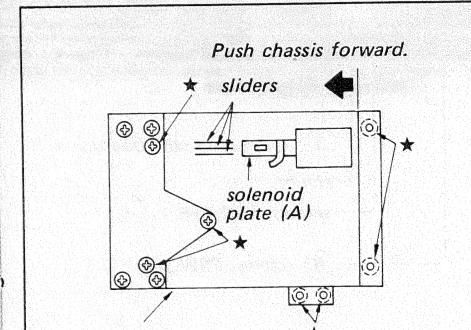
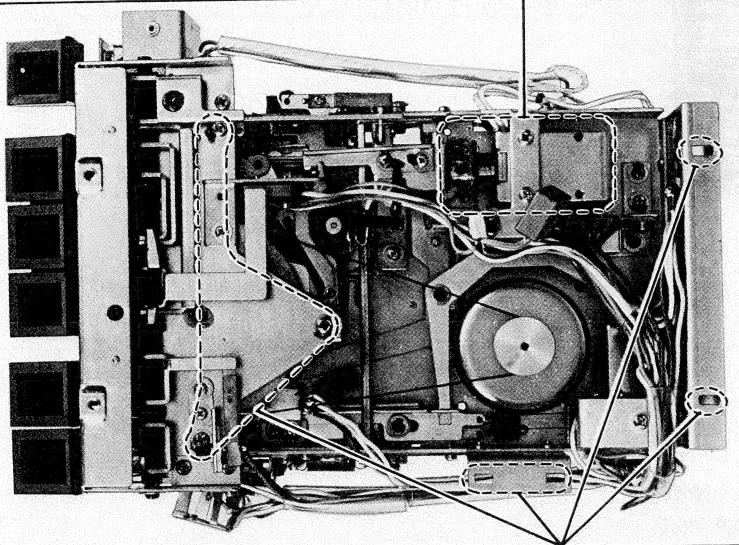
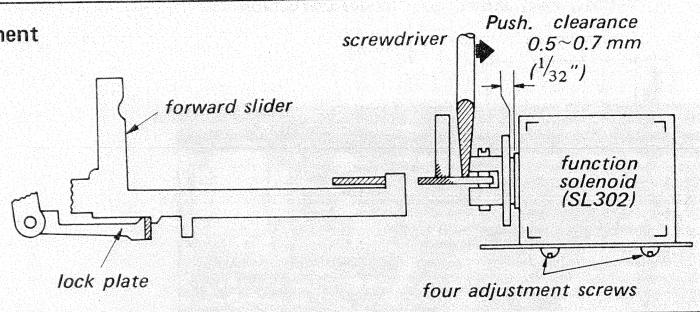
ADJUSTMENTS

3-1. MECHANICAL ADJUSTMENT

Function Solenoid (SL302) Position Adjustment

— Playback mode —

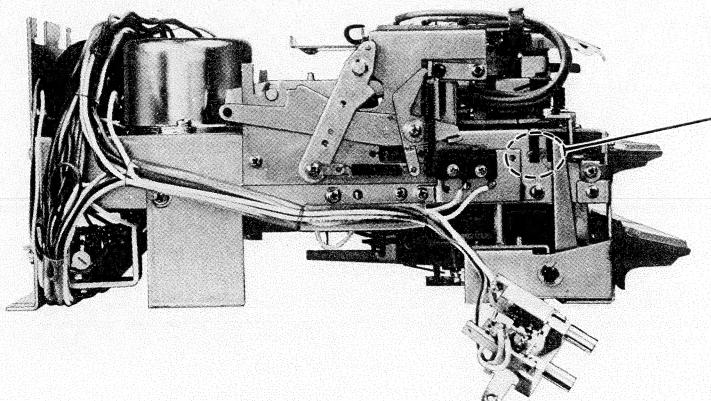
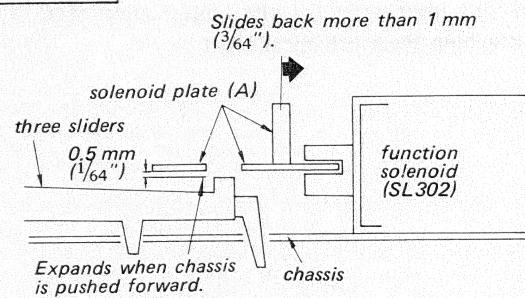
1. Load tape cassette.
2. Turn the set off. Loosen the adjustment screws and adjust the position of function solenoid to obtain the specified clearance.
3. Lock the screws after adjustment.



Slider Height Adjustment

— STOP mode —

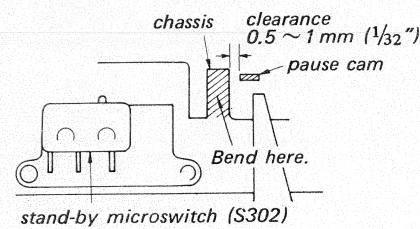
Assure that solenoid plate slides back to the stationary position in more than 1 mm ($3/64$ "). If not, loosen adjustment screws and push chassis forward to obtain the specified clearance between slider and solenoid plate (A). After adjustment, lock the adjustment screws.



Pause Cam Position Adjustment

— PAUSE mode —

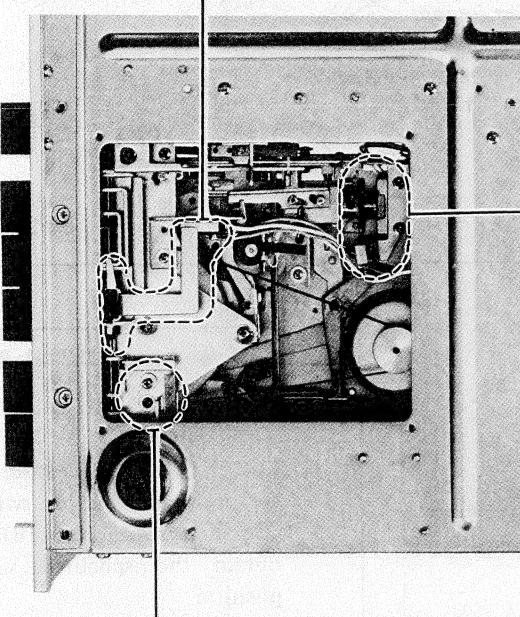
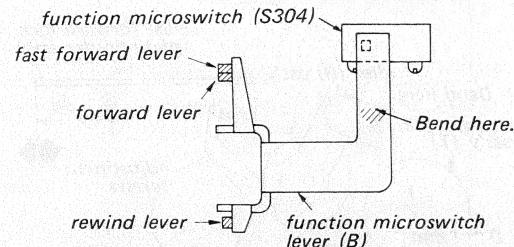
Adjust by bending the chassis to obtain the specified clearance.



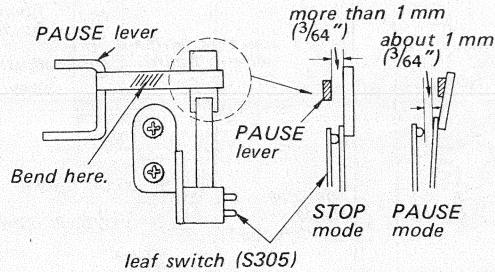
Function Microswitch Lever (B) Adjustment**— STOP, Fast Forward, Rewind and Playback Modes —**

Adjust by bending the specified portion of function microswitch lever (B) so that the switch starts to operate just before each button locks.

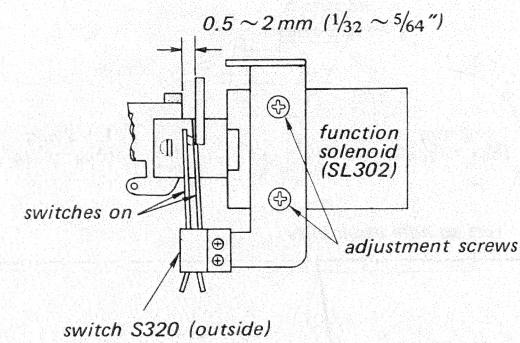
Note: Edges of forward, rewind and fast forward levers should contact edge of function microswitch lever (B) in stationary mode of the set.

**PAUSE Leaf Switch (S305) Adjustment****— STOP and PAUSE modes —**

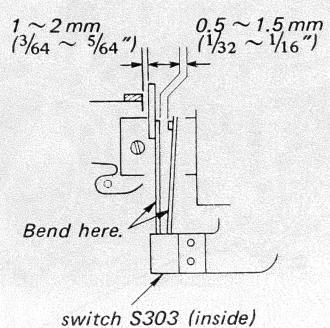
Adjust by bending PAUSE lever to obtain the specified clearances.

**Timing and System Control Leaf Switch (S320, 303) Adjustments****— STOP mode —****1. Timing Leaf Switch (S320):**

Loosen adjustment screws and adjust switch position to obtain the specified clearances. After adjustment, lock the screws.

**2. System Control Leaf Switch (S303):**

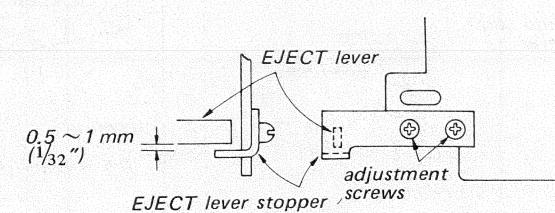
Adjust by bending leafs to obtain the specified clearances.

**EJECT Lever Stopper Position Adjustment****— Playback mode —**

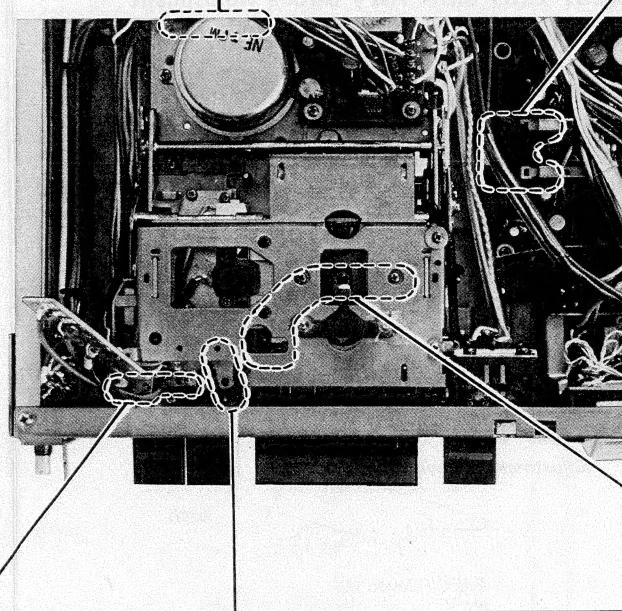
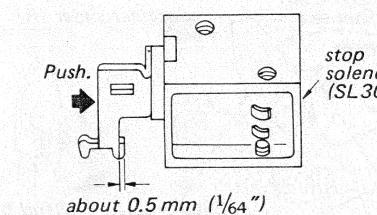
Turn the unit on and load tape cassette.

Loosen two adjustment screws and adjust position of EJECT lever stopper to obtain the specified clearance.

After adjustment, lock the screws.

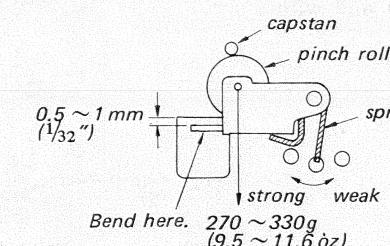
**Stop Solenoid (SL301) Position Adjustment****— STOP mode —**

Loosen two screws on top side of chassis and adjust solenoid position to obtain the specified clearance between edge of slot in the chassis and edge of stop solenoid plate.

**Pinch Roller Pressure Adjustment****— Playback mode —**

Load tape cassette. Adjust by bending the specified portion of pinch roller ass'y to obtain the specified clearance.

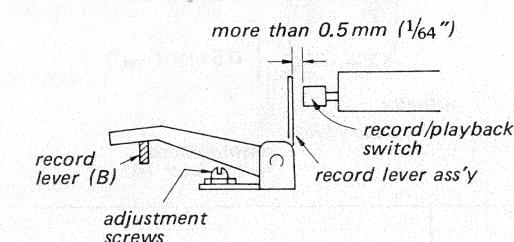
Adjust spring hooking position to obtain the specified pressure.

**Record Lever Ass'y Position Adjustment****— STOP mode —**

Load tape cassette. Loosen two adjustment screws and adjust record lever position to obtain the specified clearance.

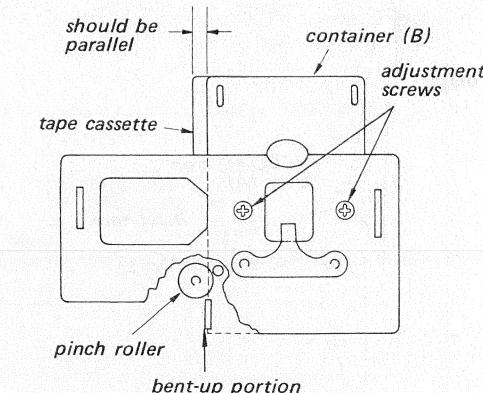
Assure that the record/playback switches operate normally in RECORD mode.

After adjustment, lock the screws.

**Container (B) Position Adjustment**

Load tape cassette. Loosen two adjustment screws and adjust position of container (B) so that the edges of cassette and container become parallel.

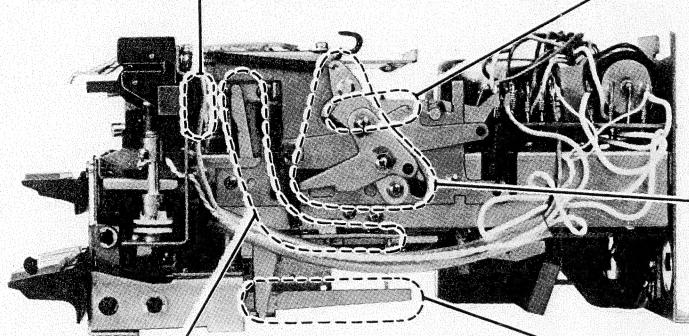
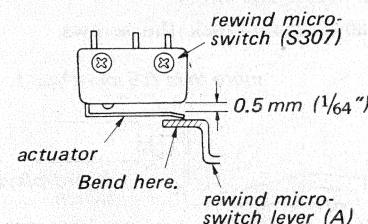
Note: Pinch roller should not touch the bent-up portion of container (B) when the unit is turned on and forward button is pressed.



Rewind Microswitch Lever (A) Adjustment**— Rewind mode —**

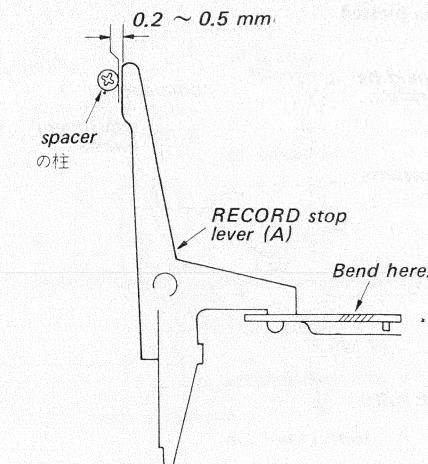
Turn the unit on and load tape cassette.

Adjust by bending the specified portion of rewind microswitch lever (A) so that the rewind microswitch (S307) actuates.

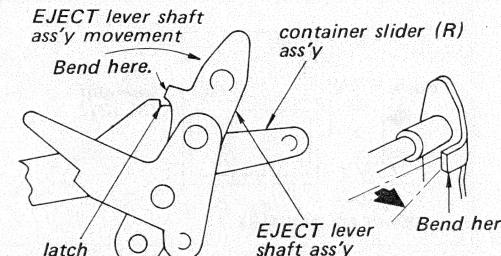
**RECORD Stop Lever (A) Adjustment****— STOP mode —**

Do not load tape cassette.

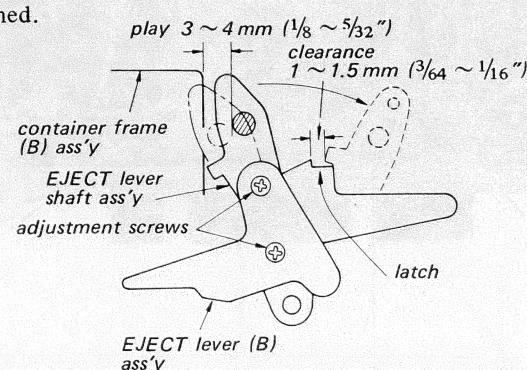
Adjust the position of the lever by bending the specified portion to obtain the specified clearance.

**EJECT Lever Shaft Ass'y Balance Adjustment****— STOP mode —**

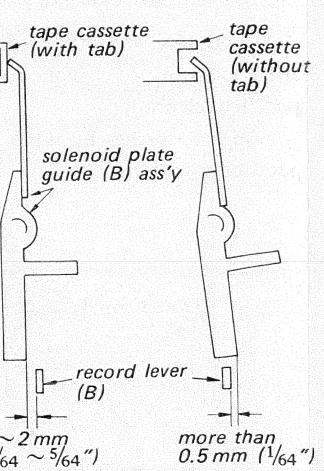
While loading tape cassette, adjust the locking timing of the EJECT lever shaft ass'y by bending the specified portions of both sides. Both projections should fall in the latches at the same time.

**EJECT Lever Shaft Ass'y Stroke Adjustment****— STOP mode —**

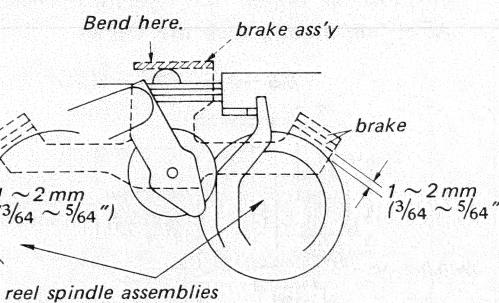
Loosen two adjustment screws and adjust the position of EJECT lever shaft ass'y to obtain the specified play when tape cassette is slowly loaded. When the EJECT lever shaft ass'y is fully pushed backwards, the specified clearance should be obtained.

**Record Lever (B) Position Adjustment**

Adjust by bending edge of record lever (B) to obtain the specified clearances using tape cassette with and without tab.

**Brake Ass'y Adjustment****— Playback, Fast Forward and Rewind Modes —**

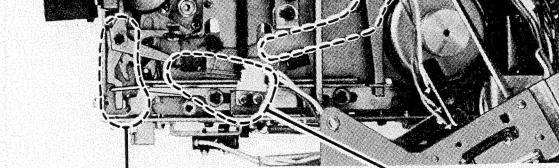
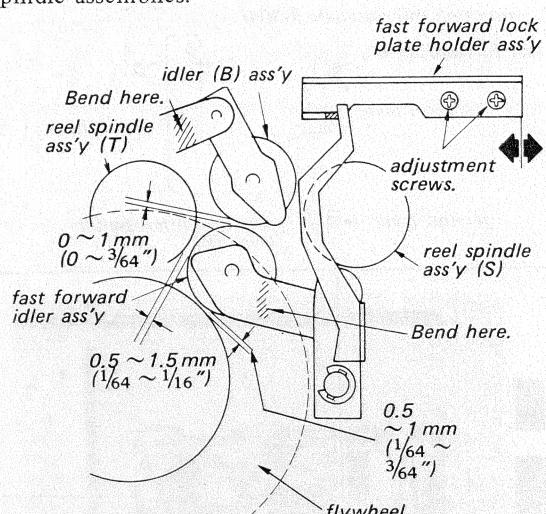
Adjust by bending the specified portion of the brake ass'y to obtain the specified clearances between brake and reel spindle assemblies.

**Fast Forward Idler (B) Ass'y Adjustment****— STOP mode —**

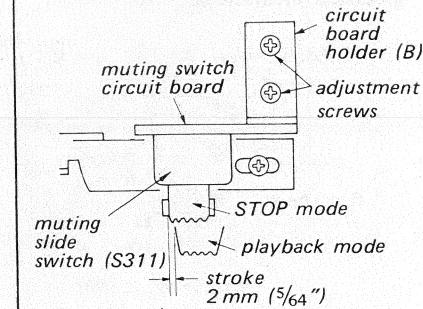
Loosen two adjustment screws and adjust the position of the fast forward lock plate holder ass'y to obtain the specified clearances.

Idler Height Adjustment

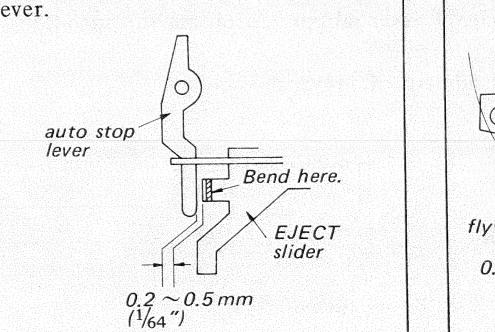
Adjust by bending the specified portions of idler assemblies to make their heights flush with reel spindle assemblies.

**Muting Slide Switch (S311) Position Adjustment****1. STOP mode:**

Loosen two adjustment screws and move the muting switch circuit board holder (B) to obtain the specified knob position.

2. By pressing forward button, push the pole of function solenoid (SL302) to lock forward button. Switch knob stroke should be 2 mm (5/64").**EJECT Slider Adjustment****— STOP mode —**

Adjust by bending the specified portion of the EJECT slider to obtain the specified clearance between the EJECT slider and auto stop lever.



3-2. ELECTRICAL ADJUSTMENTS AND MEASUREMENTS

PRECAUTION

1. Clean the following parts with an alcohol moistened swab:
 - record playback head
 - erase head
 - capstan
 - pinch roller
 - rubber belt
 - idle
2. Demagnetize record/playback head with a head demagnetizer. (Don't use magnetized screwdriver for adjustments).
3. After the adjustments, apply locking compound to the parts adjusted.
4. Adjustments should be performed in the order arranged in this service manual.
5. Adjustments and measurements should be performed each channel with rated voltage unless otherwise specified.
6. The adjustments and measurements require the test equipment as follows:
 - * VOM (20 kΩ/V)
 - * VTVM
 - * audio oscillator (af osc)
 - * attenuator (600 Ω)
 - * digital frequency counter
 - * fixed resistors
 - 300 Ω (1/4 W)
 - 600 Ω (1/4 W)
 - 100 kΩ (1/4 W)

- * blank tapes SONY CS-10 (HF)
- * speed checker SONY LFM-30
- * test tapes SONY P-4-A81S
 - (6.3 kHz, -10 dB)
 - P-4-L81
 - (333 Hz, 0 dB)
 - SPC-4
 - (1 kHz, 0 dB)

7. Rated input and output levels are as follows:

rated input level (1 kHz)

	MIC	LINE IN
source impedance	300 Ω	10 kΩ
level	-60 dB (0.77 mV)	-10 dB (0.25 V)

rated output level (1 kHz)

	LINE OUT	HEADPHONE
load resistor	100 kΩ	8 Ω
level	0 dB (0.775 V)	-28 dB (31 mV)

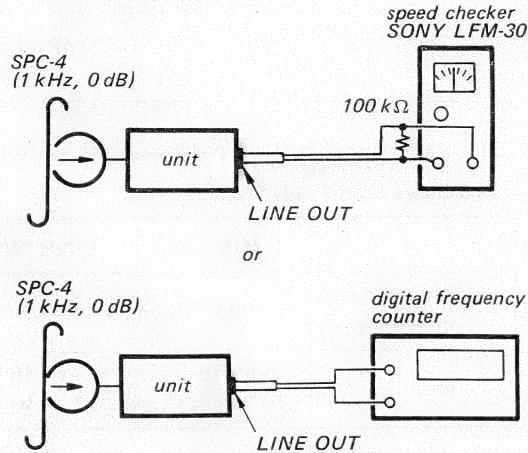
8. Controls and switches are to be set to the positions as follows unless otherwise specified.

LINE OUT control: maximum
 TAPE SELECT switch: NORMAL
 DOLBY switch: OFF
 LIMITER switch: OFF

1. Tape Speed Adjustment

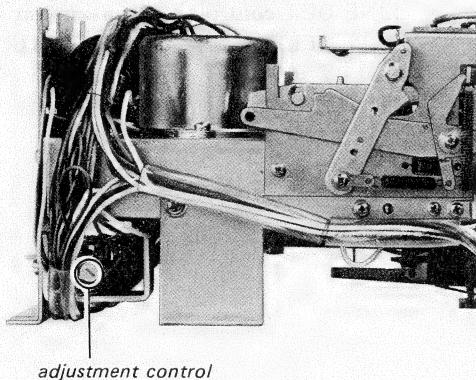
Procedure

Mode: playback



Adjust the adjustment control to obtain 0% checker indication or 1,000 Hz counter indication.

Adjustment Location:

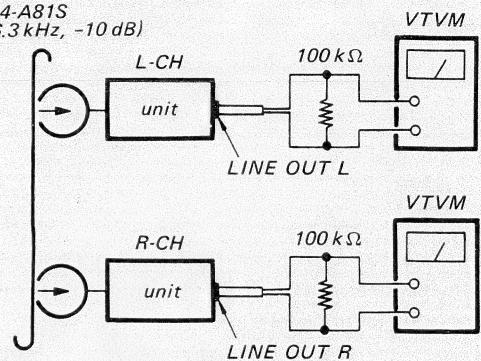


2. Record/playback Head Azimuth Adjustment

Procedure

1. Mode: playback

P-4-A81S
(6.3 kHz, -10 dB)



Carefully adjust the adjustment screw to obtain maximum VTVM readings for both L and R channels. If the readings don't coincide, set the screw midway between the two screw-positions. After adjustment, lock the screw.

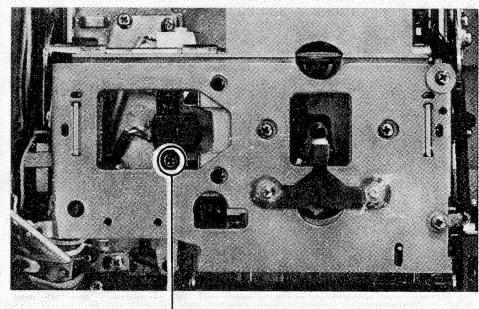
2. Mode: STOP and playback repeatedly

Assure that azimuth is not changed observing VTVM's.

Specification:

Normal azimuth should be obtained within 0.5 dB of maximum readings.

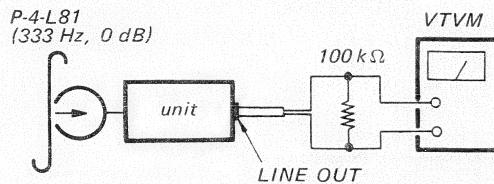
Adjustment Location



3. Playback Level Adjustment

Procedure:

Mode: playback



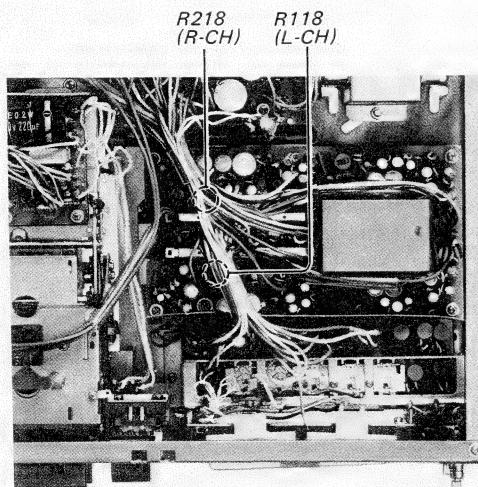
Adjust R118 (L-CH) and R218 (R-CH) to obtain 0 dB (0.775 V) VTVM reading.

By repeating playback and STOP modes, assure that the LINE OUT level does not change.

Specification:

-1 dB ~ +1 dB (0.69 ~ 0.85 V)

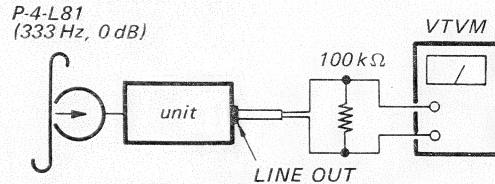
Adjustment Location:



4. Playback Equalizer Adjustment

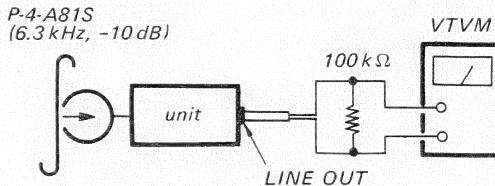
Procedure:

1. Mode: playback



LINE OUT level: -0.5 dB ~ +0.5 dB
(0.74 ~ 0.82 V)

2. TAPE SELECT switch: CrO₂ or Fe-Cr



Adjust R117 (L-CH) and R217 (R-CH) to obtain the level 16.3 dB ± 1 dB lower than that obtained in 1) above.

Specification:

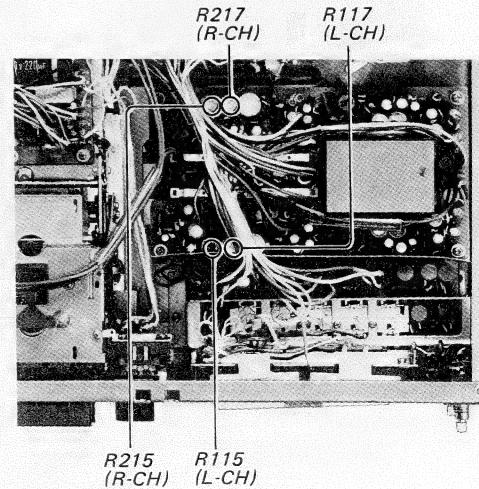
15.3 ~ 17.3 dB lower

Set the TAPE SELECT switch back to NORMAL position and adjust R115 (L-CH) and R215 (R-CH) to obtain the level 11.5 dB lower than that obtained in 1) above.

Specification:

10.5 ~ 12.5 dB lower

Adjustment Location:

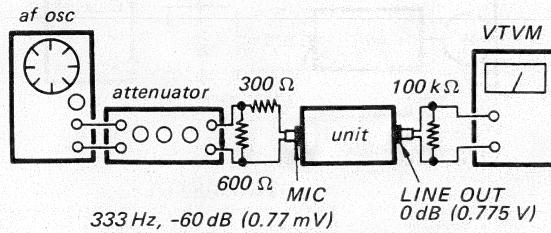


5. VU Meter Calibration

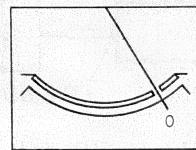
Procedure:

Mode: record

MIC control: 0 dB (0.775 V) LINE OUT position.



Adjust R169 (L-CH) and R269 (R-CH) so that VU meter needles place 0 VU.

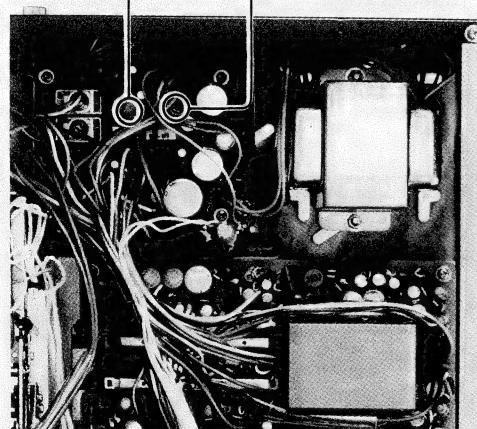


Specification:

When the input level is adjusted for 0 VU indications, LINE OUT level should be $-1 \text{ dB} \sim +1 \text{ dB}$ ($0.69 \sim 0.85 \text{ V}$).

Adjustment Location:

R169 (L-CH) R269 (R-CH)

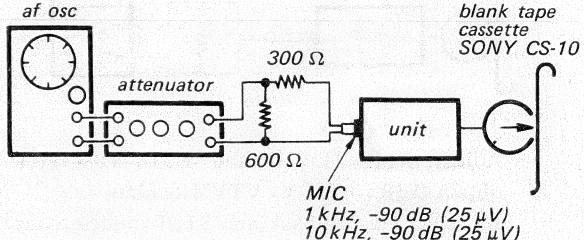


6. Record Bias Adjustment

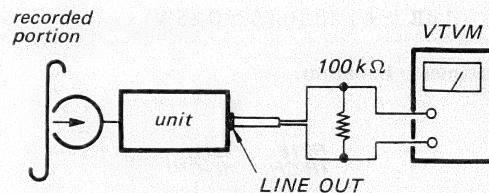
Procedure:

1. Mode: record

MIC control: at the position as set in VU Meter Calibration



2. Mode: playback



Adjust C147 (L-CH) and C247 (R-CH) to obtain the same LINE OUT level for 1 kHz and 10 kHz signals.

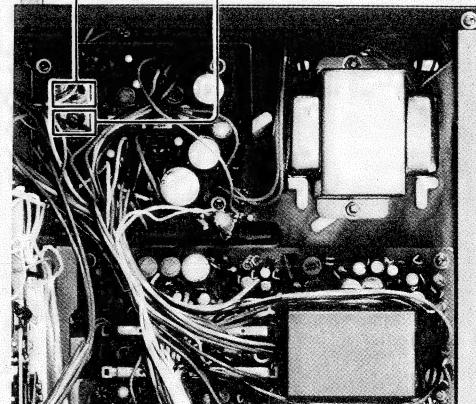
3. Repeat steps 1. and 2.

Specification:

10 kHz signal output level difference from 1 kHz signal should be $-0.5 \text{ dB} \sim +0.5 \text{ dB}$.

Adjustment Location:

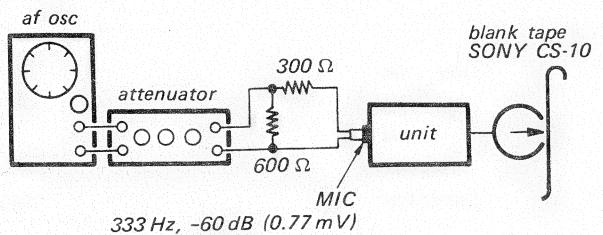
C247 (R-CH) C147 (L-CH)



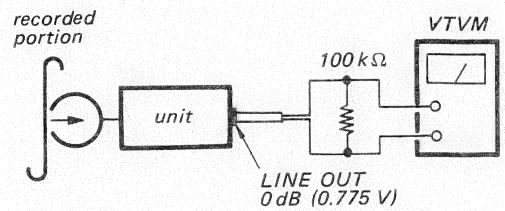
7. Record Level Adjustment

Procedure:

1. Mode: record
MIC control: 0 dB (0.775 V) LINE OUT position.



2. Mode: playback

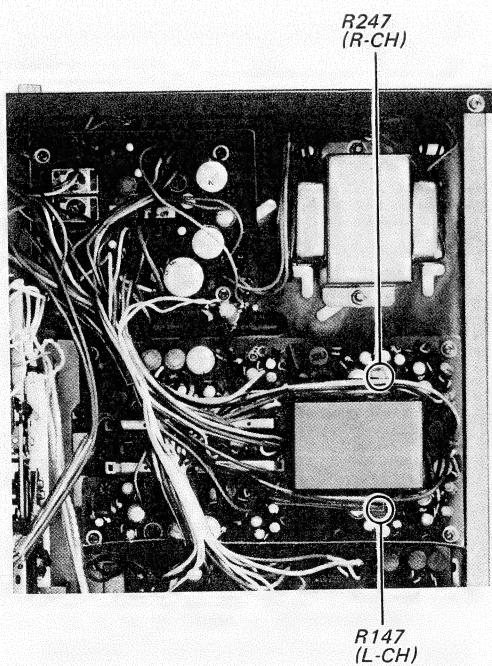


Adjust R147 (L-CH) and R247 (R-CH) to obtain LINE OUT level of 0 dB (0.775 V).

Specification:

-0.5 dB ~ +0.5 dB (0.74 ~ 0.82 V)

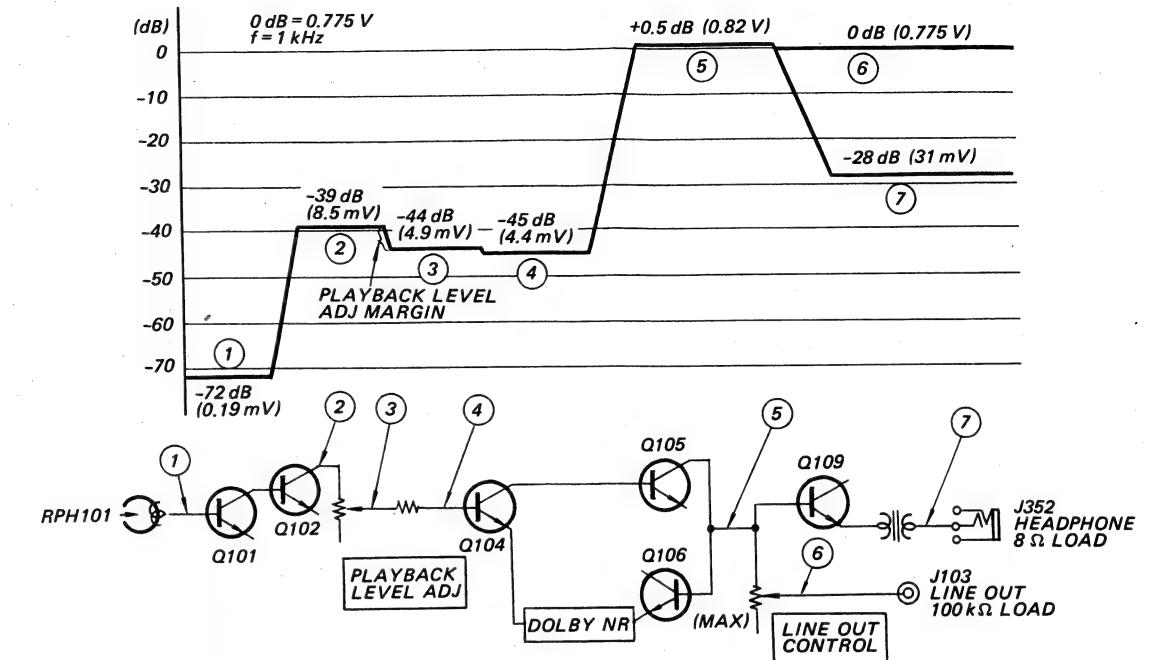
Adjustment Location:



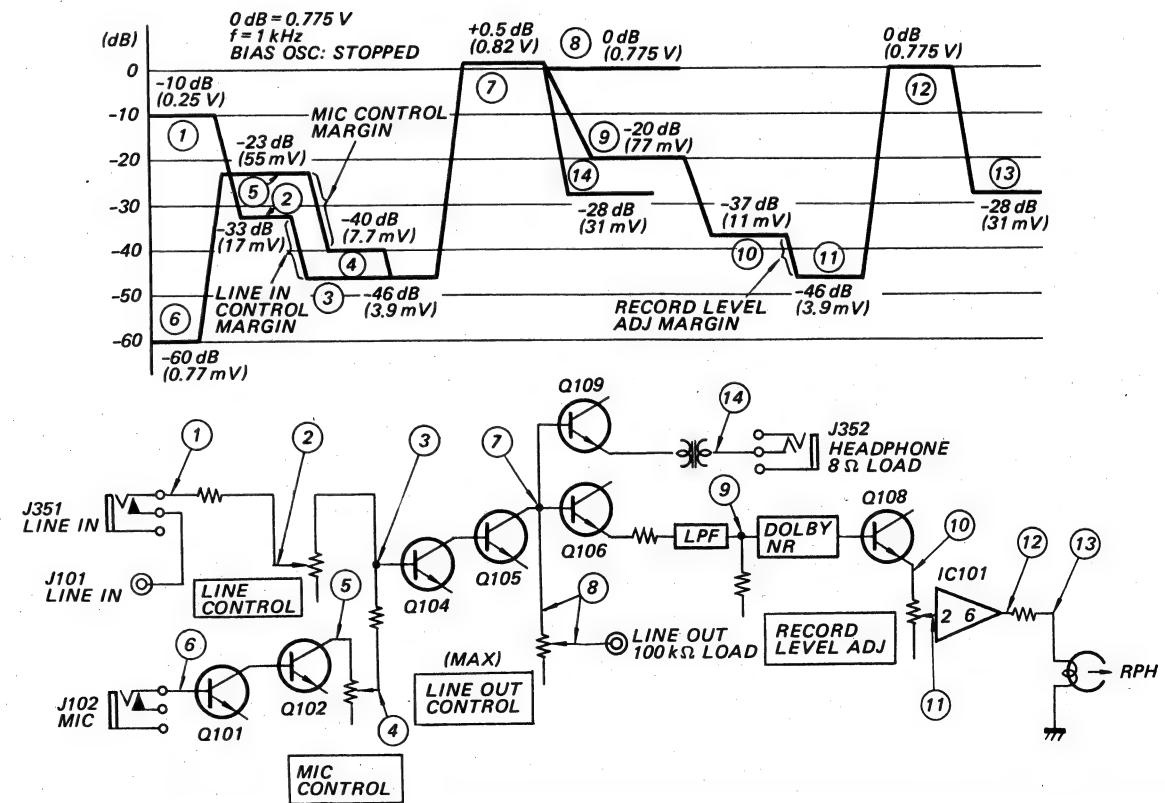
SECTION 4 DIAGRAMS

4-1. LEVEL DIAGRAMS

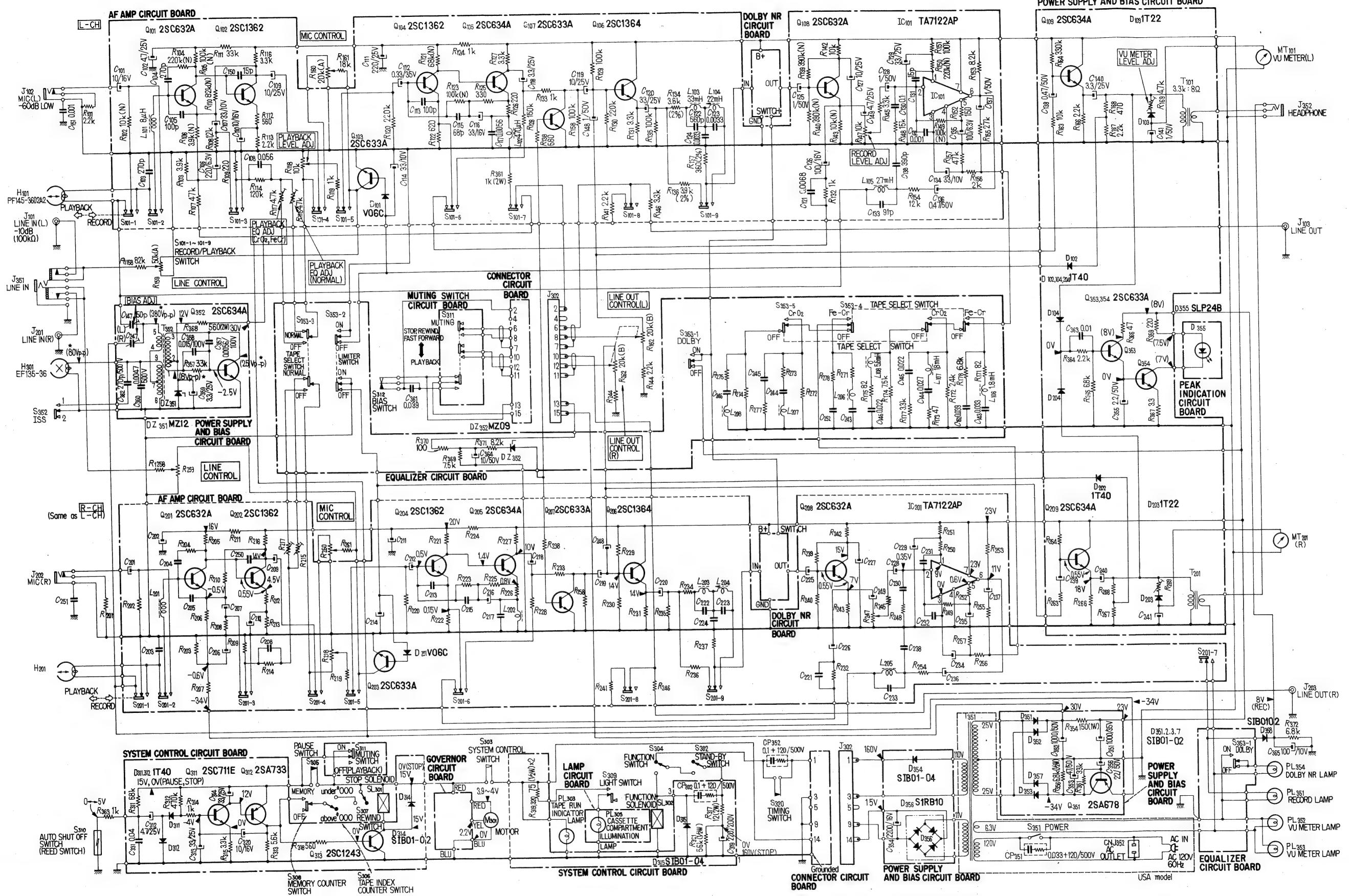
PLAYBACK



RECORD

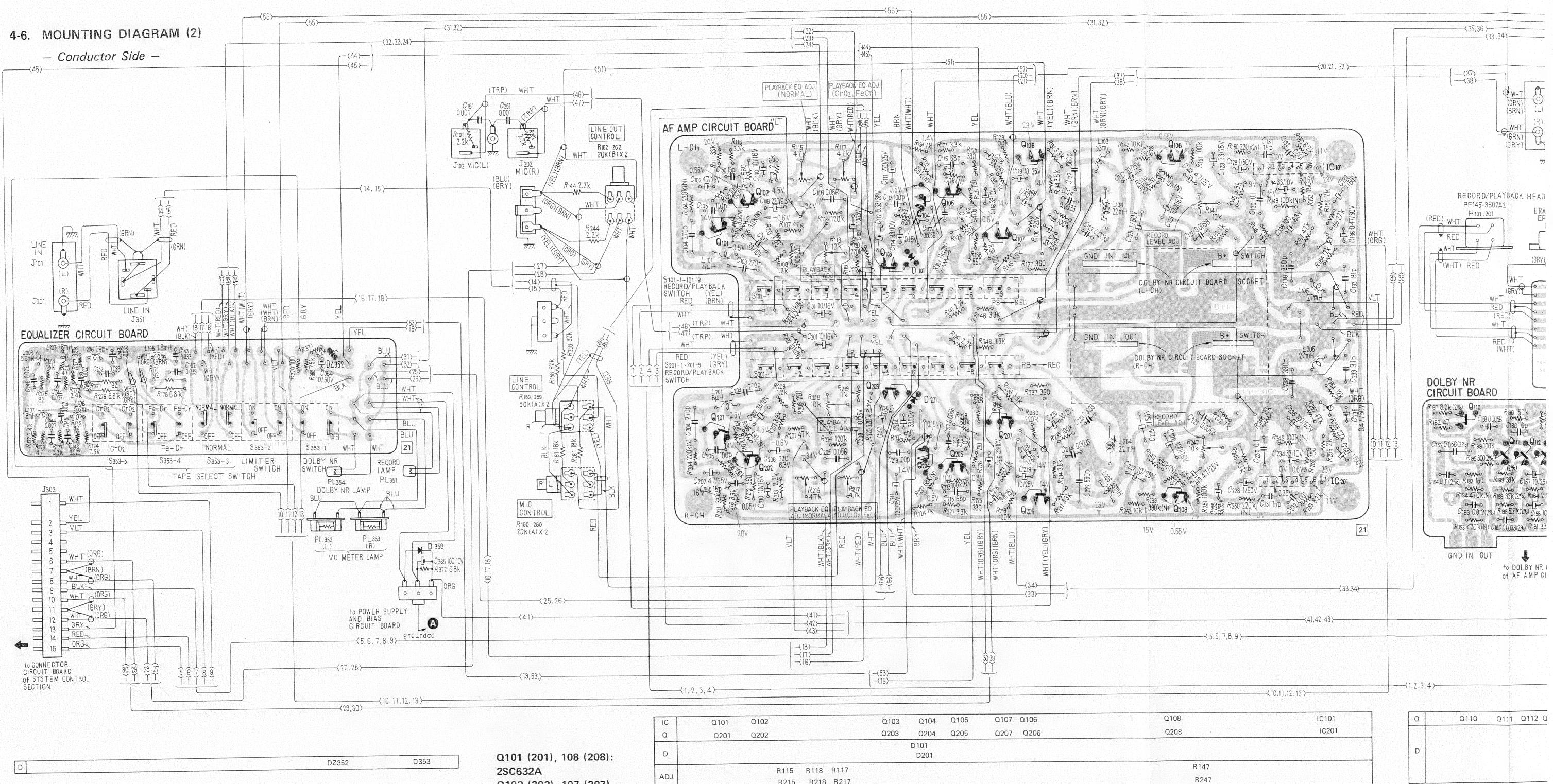


4-2. SCHEMATIC DIAGRAM (1)



4-6. MOUNTING DIAGRAM (2)

- Conductor Side -



Q101 (201), 108 (208):

2SC632A

Q103 (203), 107 (207),
353 (354):

2SC633A

Q105 (205), 109 (209),
110~113, 352:

2SC1362

Q106 (206): 2SC1364

Q351: 2SA678

IC101, 201: TA7122AP

Q107, 106: 1T40

Q108: 1S1555

D102, 104, 202,
204: 1T40

D103, 203: 1T22

D108, 109: 1S1555

D106, 107: 1T22A

D351, 352, 353, 357

D358: SIB01-02

D354: SIB01-04

D355: SLP24B

IC	Q101 Q201	Q102 Q202	Q103 Q203	Q104 Q204	Q105 Q205	Q107 Q207	Q106 Q206	Q108 Q208	IC101 IC201
D101 D201									
ADJ			R115 R215	R118 R218	R117 R217			R147 R247	

A	Q110	Q111	Q112
D			

Q102 (202), 104 (204):

2SC1362

Q106 (206): 2SC1364

Q351: 2SA678

IC101, 201: TA7122AP

D101, 201: VO6C

D102, 104, 202,
204: 1T40

D103, 203: 1T22

D108, 109: 1S1555

D106, 107: 1T22A

D351, 352, 353, 357

D358: SIB01-02

D354: SIB01-04

D355: SLP24B

Q102 (202), 104 (204):

2SC1362

Q106 (206): 2SC1364

Q351: 2SA678

IC101, 201: TA7122AP

D101, 201: VO6C

D102, 104, 202,
204: 1T40

D103, 203: 1T22

D108, 109: 1S1555

D106, 107: 1T22A

D351, 352, 353, 357

D358: SIB01-02

D354: SIB01-04

D355: SLP24B

Q102 (202), 104 (204):

2SC1362

Q106 (206): 2SC1364

Q351: 2SA678

IC101, 201: TA7122AP

D101, 201: VO6C

D102, 104, 202,
204: 1T40

D103, 203: 1T22

D108, 109: 1S1555

D106, 107: 1T22A

D351, 352, 353, 357

D358: SIB01-02

D354: SIB01-04

D355: SLP24B

Q102 (202), 104 (204):

2SC1362

Q106 (206): 2SC1364

Q351: 2SA678

IC101, 201: TA7122AP

D101, 201: VO6C

D102, 104, 202,
204: 1T40

D103, 203: 1T22

D108, 109: 1S1555

D106, 107: 1T22A

D351, 352, 353, 357

D358: SIB01-02

D354: SIB01-04

D355: SLP24B

Q102 (202), 104 (204):

2SC1362

Q106 (206): 2SC1364

Q351: 2SA678

IC101, 201: TA7122AP

D101, 201: VO6C

D102, 104, 202,
204: 1T40

D103, 203: 1T22

D108, 109: 1S1555

D106, 107: 1T22A

D351, 352, 353, 357

D358: SIB01-02

D354: SIB01-04

D355: SLP24B

Q102 (202), 104 (204):

2SC1362

Q106 (206): 2SC1364

Q351: 2SA678

IC101, 201: TA7122AP

D101, 201: VO6C

D102, 104, 202,
204: 1T40

D103, 203: 1T22

D108, 109: 1S1555

D106, 107: 1T22A

D351, 352, 353, 357

D358: SIB01-02

D354: SIB01-04

D355: SLP24B

Q102 (202), 104 (204):

2SC1362

Q106 (206): 2SC1364

Q351: 2SA678

IC101, 201: TA7122AP

D101, 201: VO6C

D102, 104, 202,
204: 1T40

D103, 203: 1T22

D108, 109: 1S1555

D106, 107: 1T22A

D351, 352, 353, 357

D358: SIB01-02

D354: SIB01-04

D355: SLP24B

Q102 (202), 104 (204):

2SC1362

Q106 (206): 2SC1364

Q351: 2SA678

IC101, 201: TA7122AP

D101, 201: VO6C

D102, 104, 202,
204: 1T40

D103, 203: 1T22

D108, 109: 1S1555

D106, 107: 1T22A

D351, 352, 353, 357

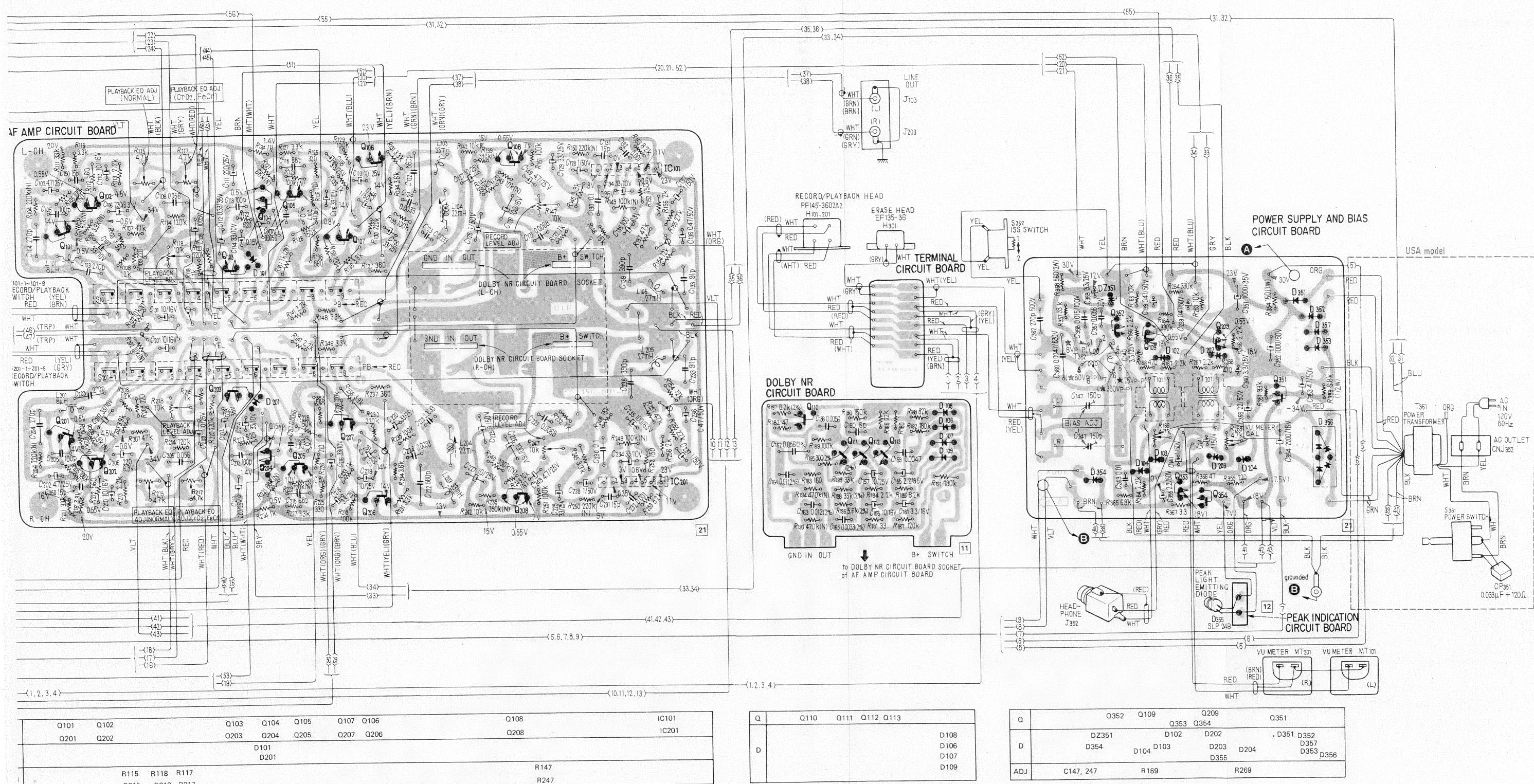
D358: SIB01-02

D354: SIB01-04

D355: SLP24B

Q102 (202), 104 (204):

2SC1



23) 104 (204):

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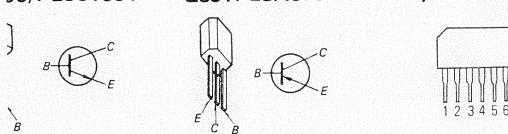
D102, 104, 202
204: 1T40
108 109: 1S

D103, 203: 1T22 358: SIB01-0
5 106, 107: 1T22A D354: SIB01-0

357 D355: SLP24B D356: S1RE

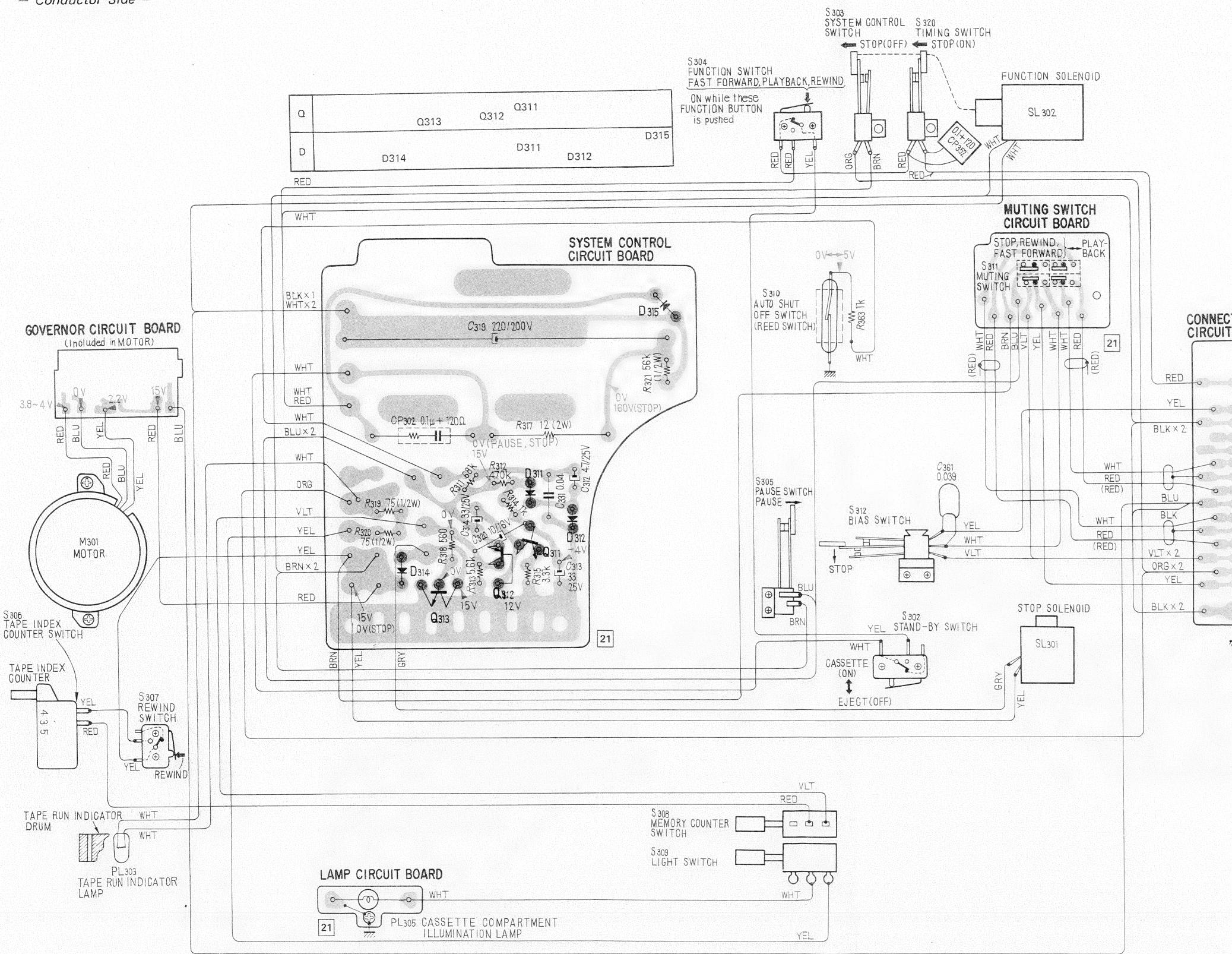
DZ351: MZ

: B + pattern
Color indication for the shielded wires.
Example: WHT (ORG) [BRN]
WHT

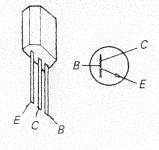


4-7. MOUNTING DIAGRAM (4)

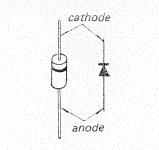
- Conductor Side -



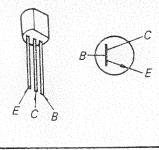
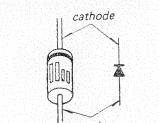
Q110~113: 2SC634A



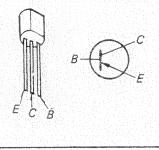
D311, 312: 1T40



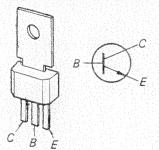
Q311: 2SC711E

D314: SIB01-02
D315: SIB01-04

Q312: 2SA733



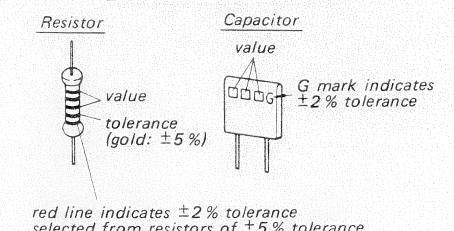
Q313: 2SC1243



Note:

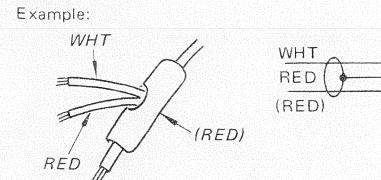
- All resistors and capacitors are in Ω and μF respectively, unless otherwise specified. $\mu = \mu F$
- Letter in () suffixed to variable resistor value indicates characteristics.
- --- : Chassis ground
- Components for R-CH have the same values as for L-CH.
- Voltage values shown are measured with a voltmeter (20k Ω /V DC). Variations may be noted due to normal production tolerances.
- no mark : playback mode voltage
() : record or PAUSE
- When replacing resistors and capacitors needing $\pm 2\%$ tolerance, use only those with red line or G mark, since DOLBY system requires precise circuit operation.

2% Tolerance Identification



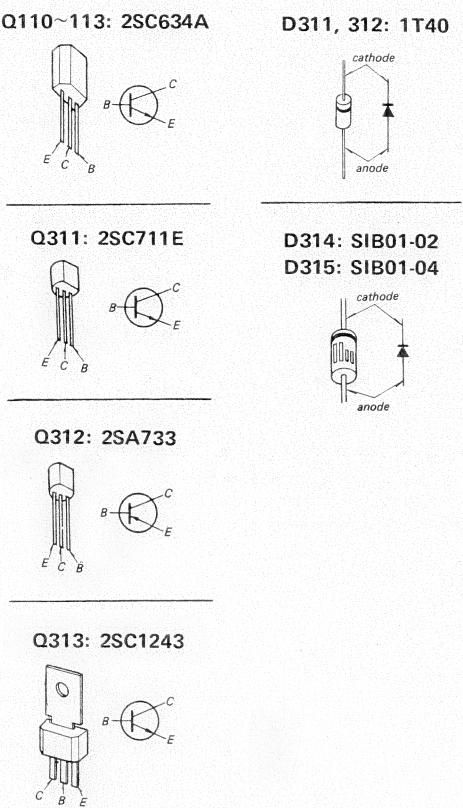
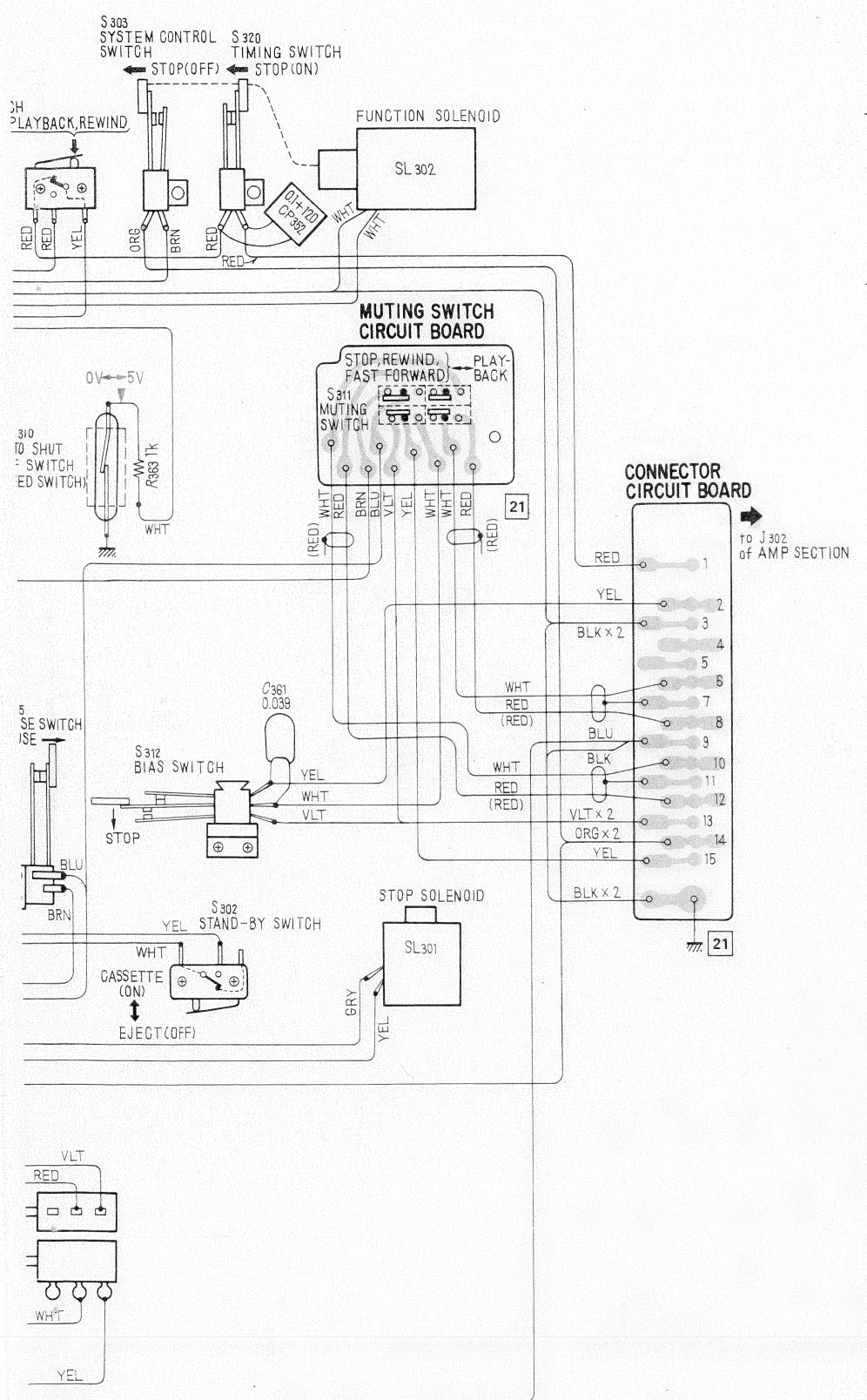
red line indicates ±2% tolerance selected from resistors of ±5% tolerance

- --- : B + pattern
- Shielded wires.
Example:



SECTION 5

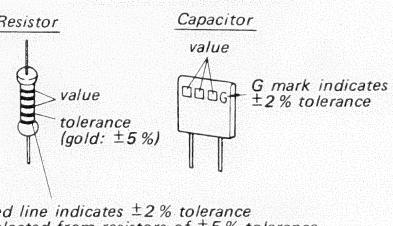
PACKING AND EXPLODED VIEWS



Note:

- All resistors and capacitors are in Ω and μF respectively, unless otherwise specified. $\mu = \mu$
- Letter in () suffixed to variable resistor value indicates characteristics.
- --- : Chassis ground
- Components for R-CH have the same values as for L-CH.
- Voltage values shown are measured with a voltmeter (20 k Ω /V DC). Variations may be noted due to normal production tolerances.
- no mark : playback mode voltage
() : record or PAUSE
- When replacing resistors and capacitors needing $\pm 2\%$ tolerance, use only those with red line or G mark, since DOLBY system requires precise circuit operation.

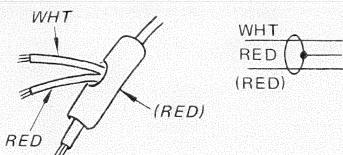
2% Tolerance Identification



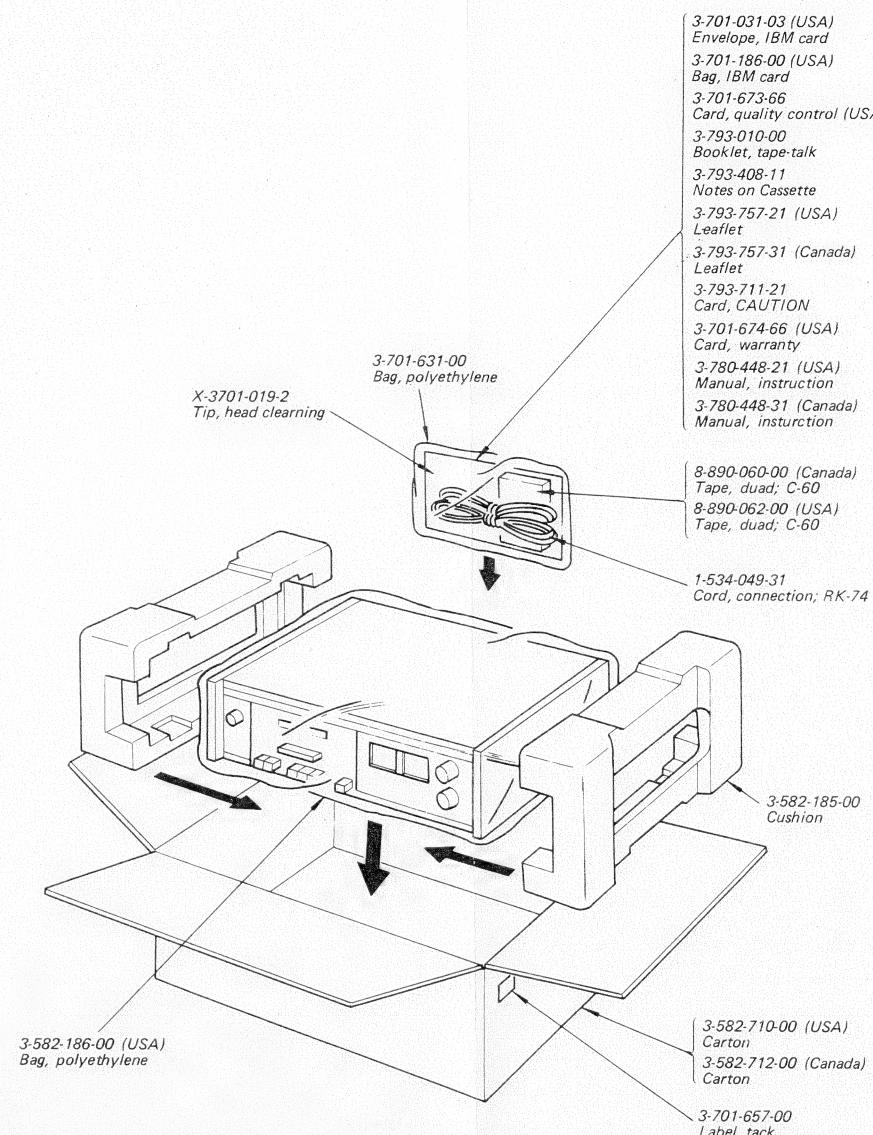
red line indicates $\pm 2\%$ tolerance
selected from resistors of $\pm 5\%$ tolerance

- : B+ pattern
- Shielded wires.

Example:

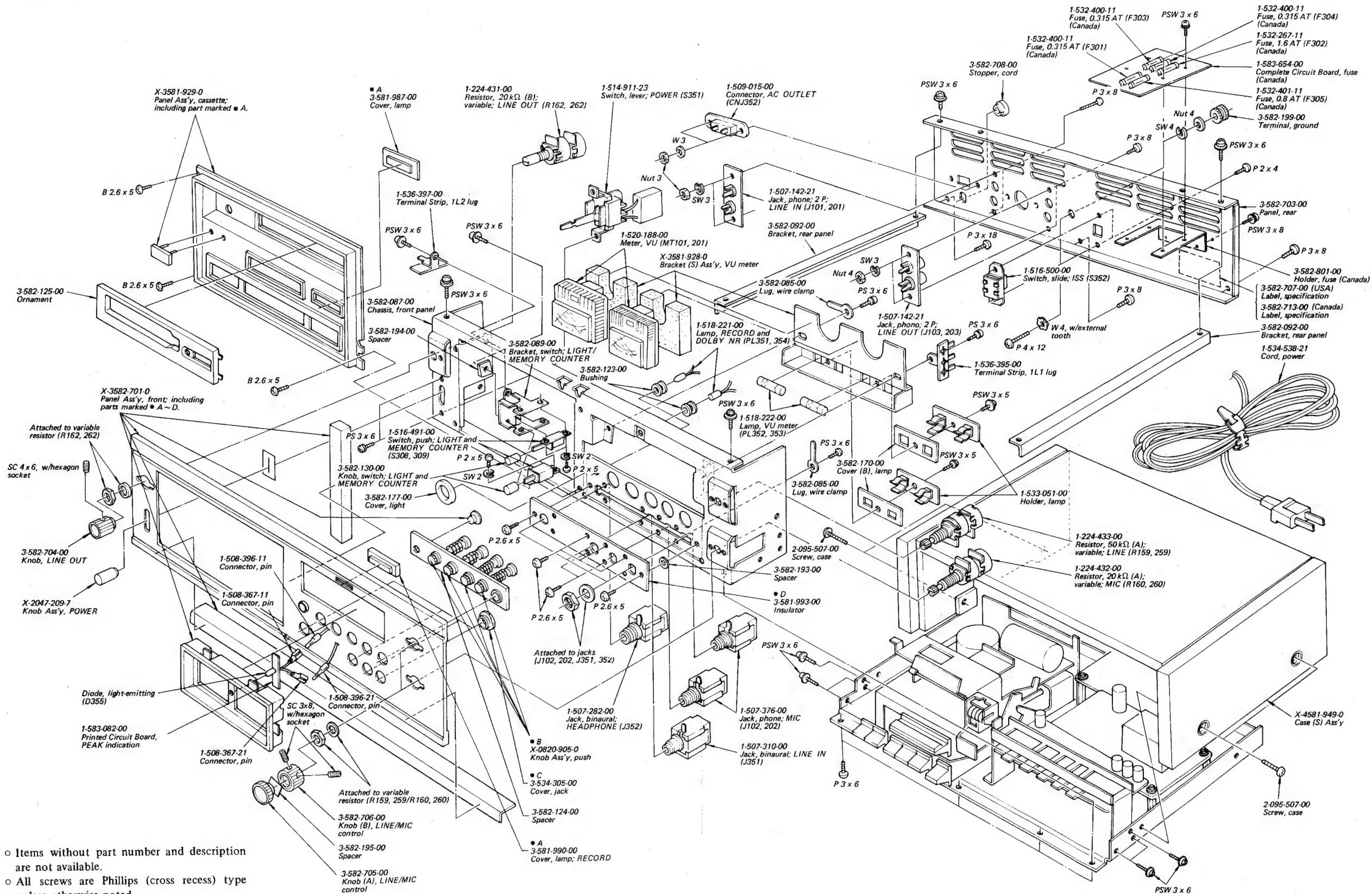


5-1. PACKING



Note: Items without part number and description are not available.

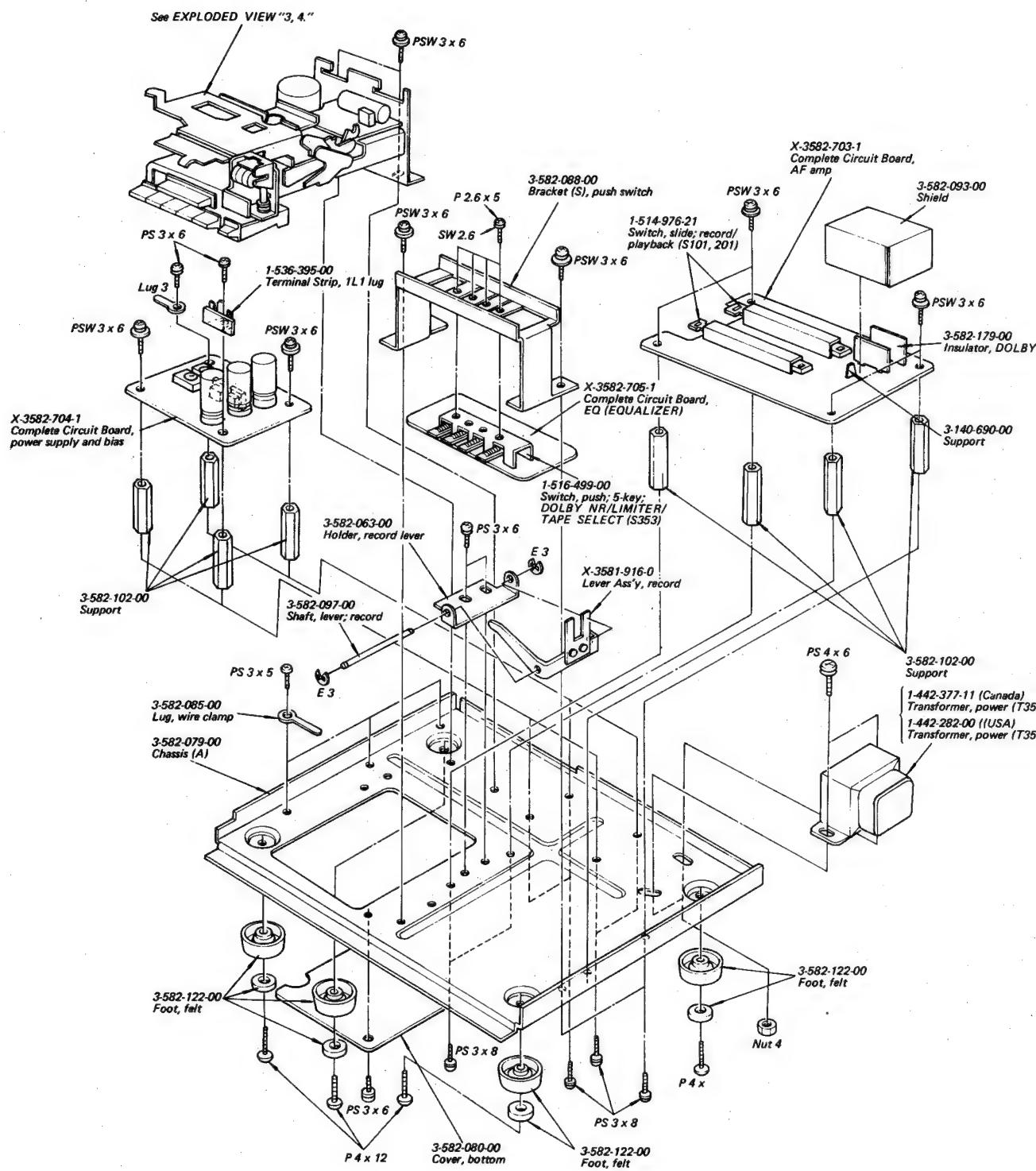
5-2. EXPLODED VIEW (1)



Note:

- Items without part number and description are not available.
- All screws are Phillips (cross recess) type unless otherwise noted.
- (-) = slotted head

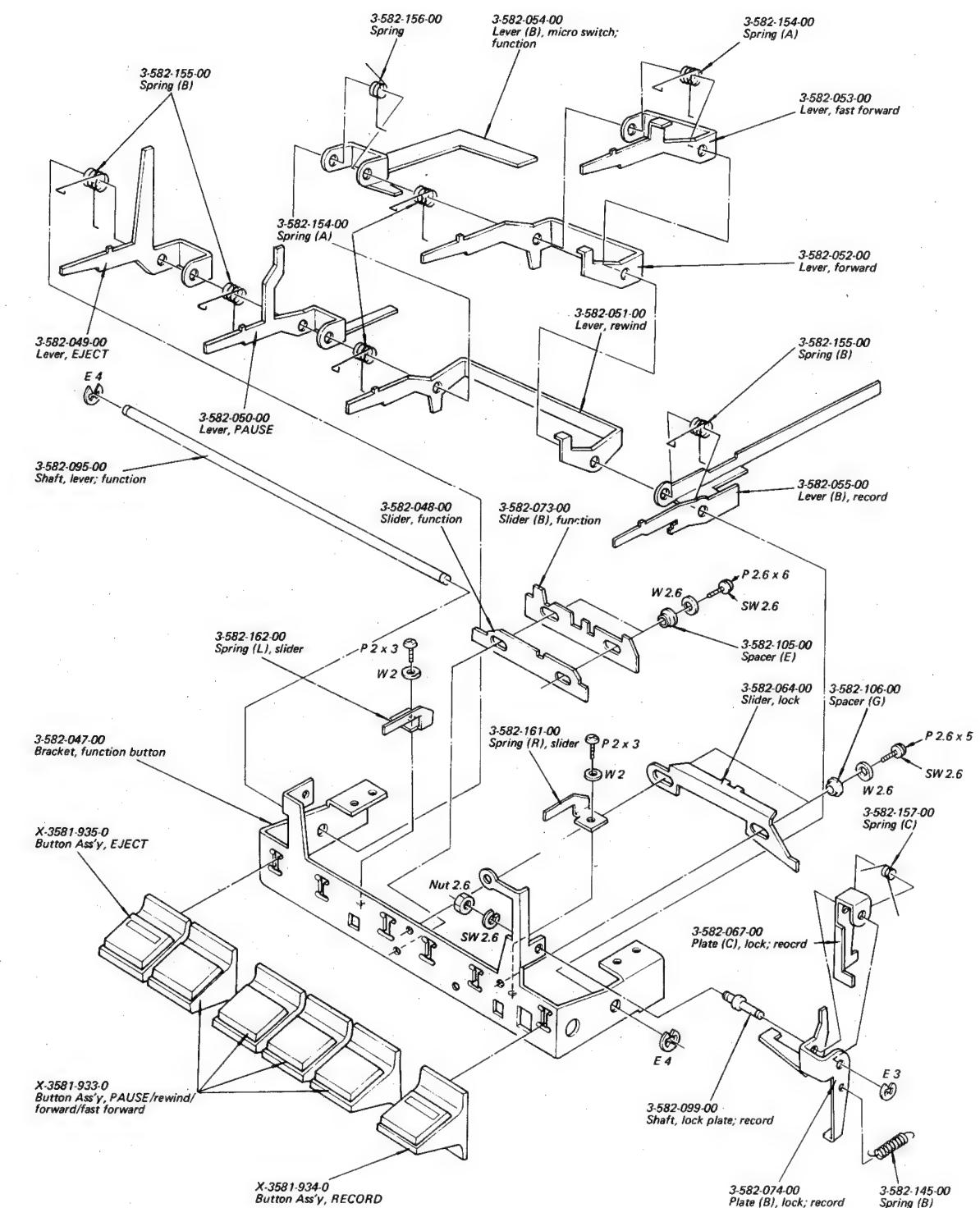
5-3. EXPLODED VIEW (2)



Note:

- Items without part number and description are not available.
- All screws are Phillips (cross recess) type unless otherwise noted.
- (-) = slotted head

5-4. EXPLODED VIEW (3)

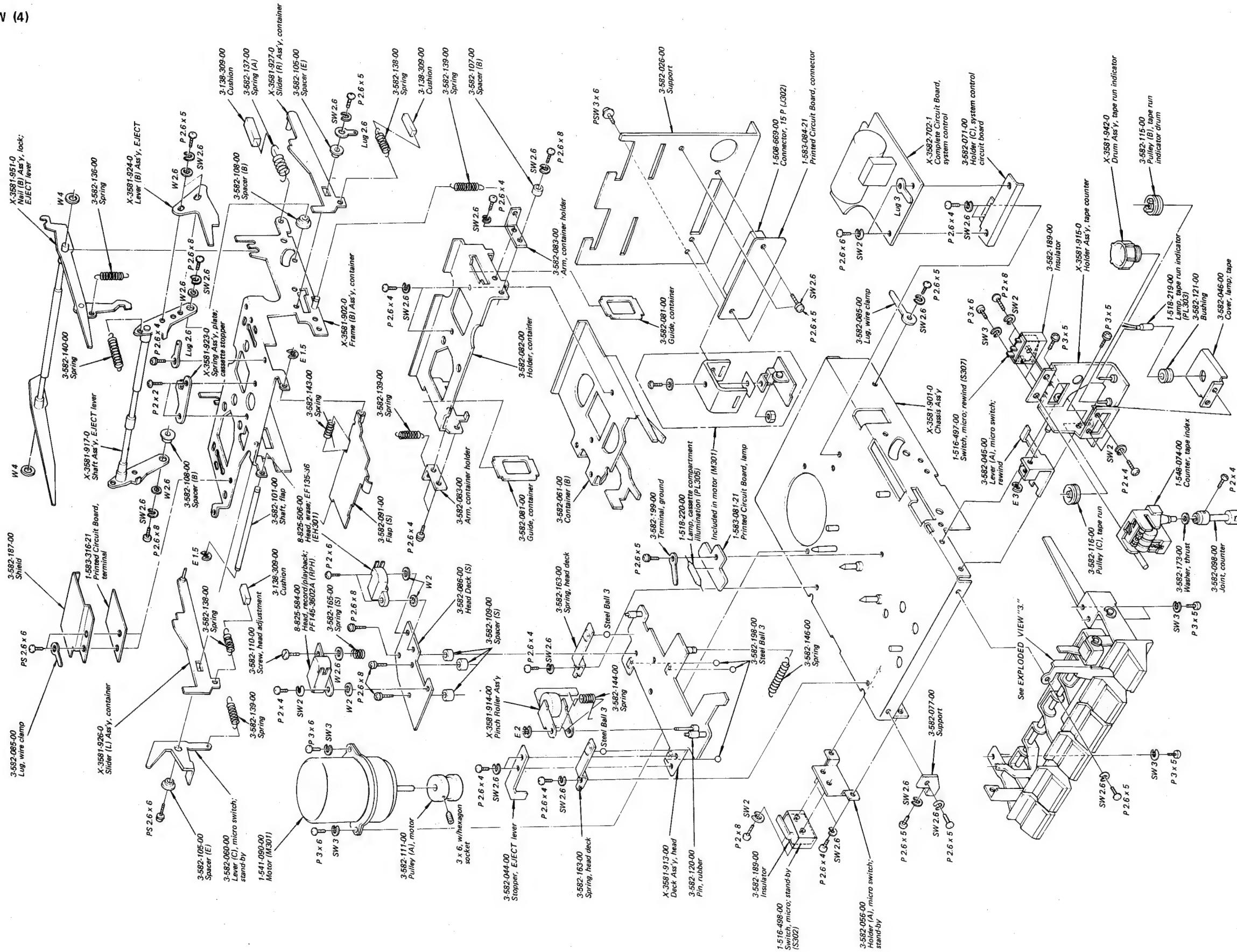


Note:

- Items without part number and description are not available.
- All screws are Phillips (cross recess) type unless otherwise noted.

(-) = slotted head

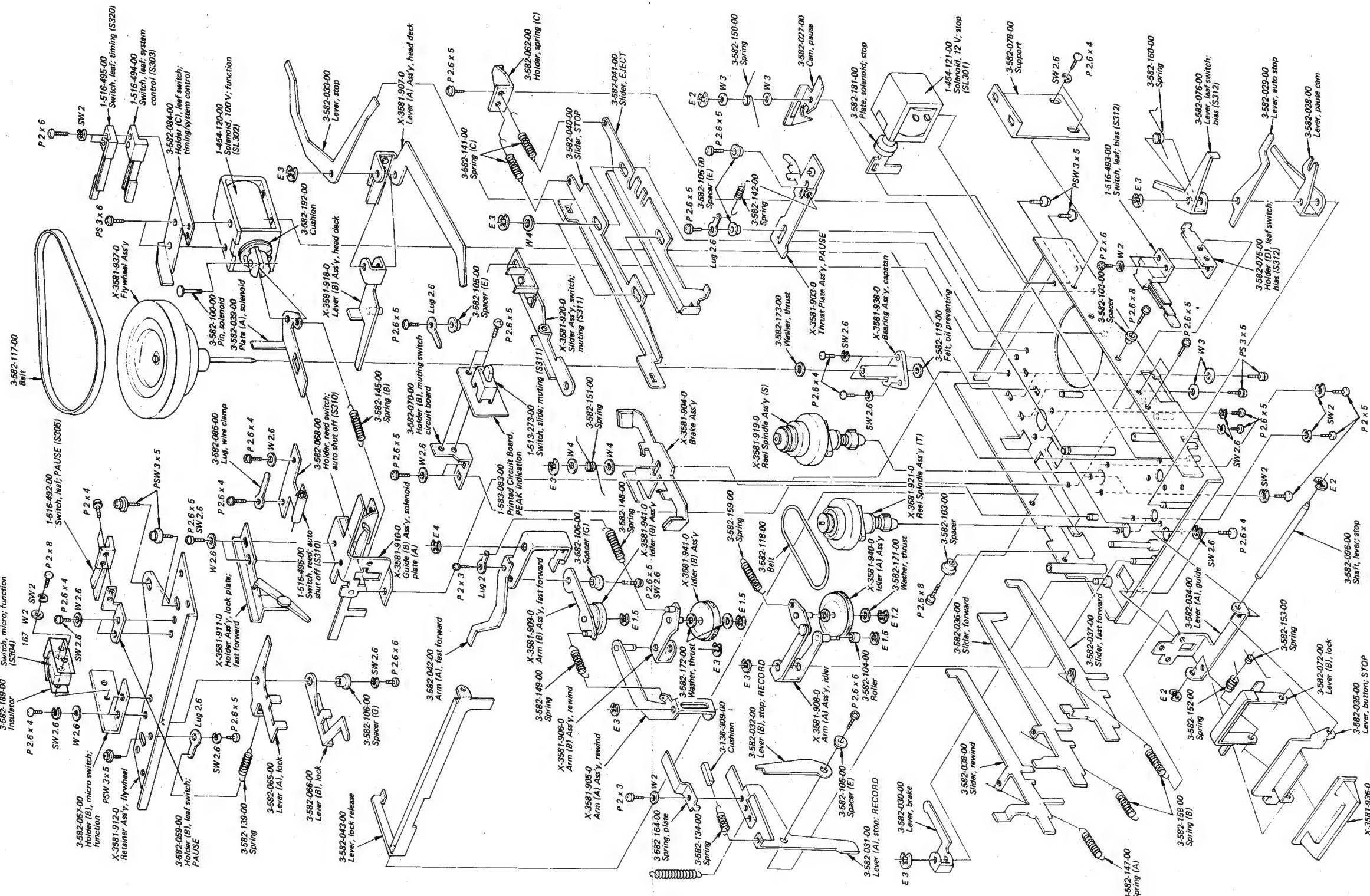
5-5. EXPLODED VIEW (4)



Note:

- Items without part number and description are not available.
- All screws are Phillips (cross recess) type unless otherwise noted.
(-) = slotted head

5-6. EXPLODED VIEW (5)



Note: ○ Items without part number and description are not available.
○ All screws are Phillips (cross recess) type unless otherwise noted.
(-) = slotted head

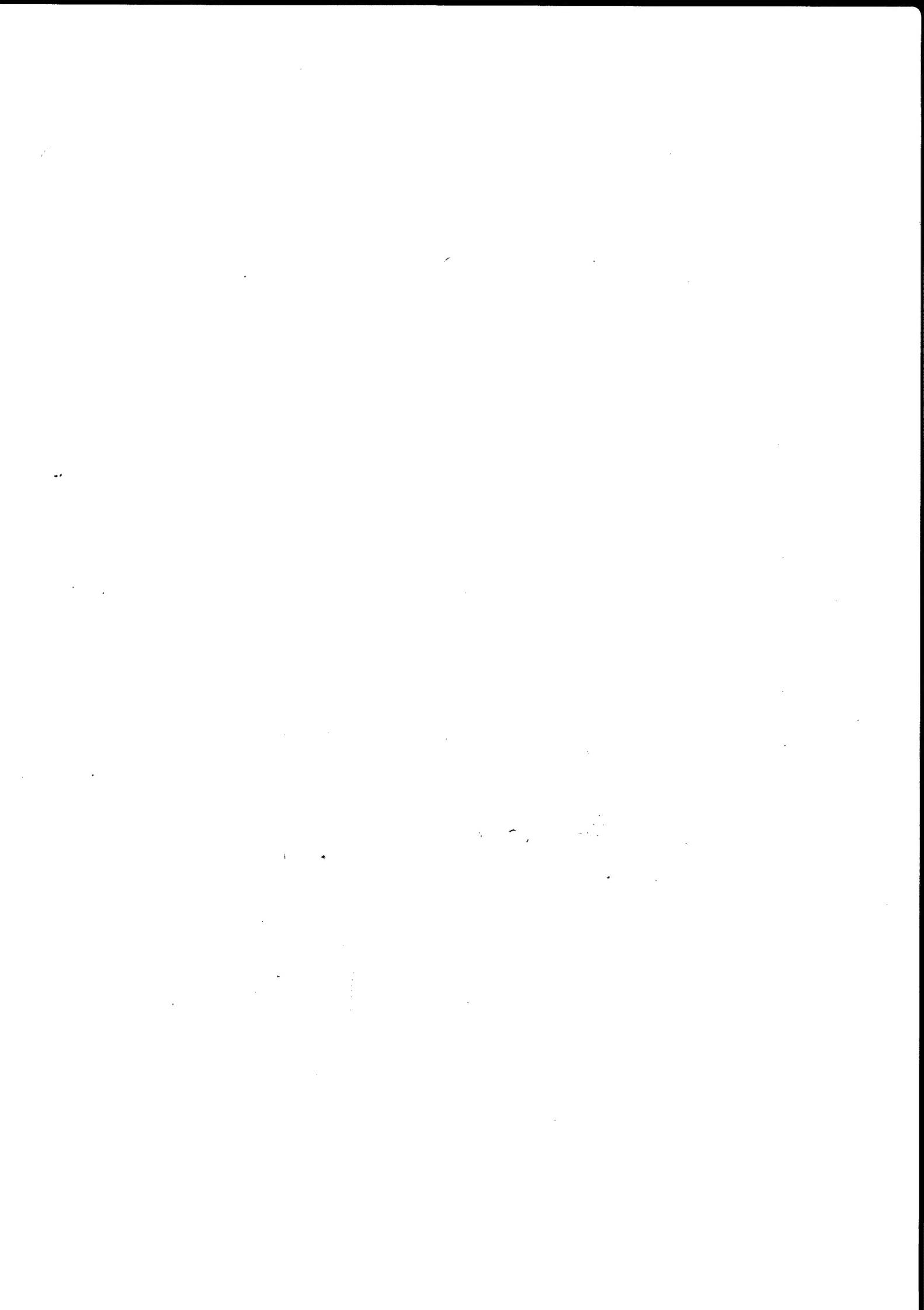
SECTION 6

ELECTRICAL PARTS LIST

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>			
COMPLETE CIRCUIT BOARDS								
X-3582-702-1	System Control		D351 ~ 353		Diode SIB01-02			
X-3582-703-1	AF amp, including DOLBY NR circuit boards		D354		Diode SIB01-04			
X-3582-704-1	Power Supply and Bias		D355		Diode SLP-24B			
X-3582-705-1	EQ (EQUALIZER)		D356		Diode SIRB-10			
			D357, 358		Diode SIB01-02			
			DZ351		Diode MZ-12			
			DZ352		Diode MZ-09			
PRINTED CIRCUIT BOARDS								
1-583-081-00	Lamp		COILS					
1-583-082-00	PEAK indication		L101, 201	1-407-519-00	8 μ H	inductor		
1-583-083-00	Muting Switch		L102, 202	1-407-177-00	470 μ H	microinductor		
1-583-084-00	Connector		L103, 203	1-407-510-00	33 mH	microinductor		
1-583-316-00	Terminal		L104, 204	1-407-240-00	22 mH	variable inductor		
1-583-654-00	Fuse (Canada Model)		L105, 205	1-407-509-00	27 mH	microinductor		
SEMICONDUCTORS								
Q101, 201	Transistor	2SC632A	L106, 206	1-407-495-00	1.8 mH	microinductor		
Q102, 202	Transistor	2SC1362	L107, 207	1-407-501-00	5.6 mH	microinductor		
Q103, 203	Transistor	2SC633A	TRANSFORMERS					
Q104, 204	Transistor	2SC1362	T101, 201	1-427-299-00	Headphone Output			
Q105, 205	Transistor	2SC634A	T351	1-442-282-00	Power (USA)			
Q106, 206	Transistor	2SC1364		1-442-377-00	Power (Canada)			
Q107, 207	Transistor	2SC633A	T352	1-433-132-11	Bias Osc			
Q108, 208	Transistor	2SC632A	CAPACITORS					
Q109, 209	Transistor	2SC634A	All capacitors are in μ F unless otherwise indicated. (p = $\mu\mu$, elect = electrolytic).					
Q110, 210	Transistor	2SC634A	C101, 201	1-121-651-11	10	16V elect		
Q111~113)	Transistor	2SC634A	C102, 202	1-121-395-11	4.7	25V elect		
Q211~213)			C103, 203	1-107-095-11	270p	50V silvered mica		
Q311	Transistor	2SC711E	C104, 204	1-107-085-11	100 p	50V silvered mica		
Q312	Transistor	2SA733	C105, 205	1-121-419-11	220	6.3V elect		
Q313	Transistor	2SC1243	C106, 206	1-121-402-11	33	10V elect		
Q351	Transistor	2SA678	C107, 207	1-105-522-12	0.056	50V mylar		
Q352	Transistor	2SC634A	C108, 208	1-121-398-11	10	25V elect		
Q353, 354	Transistor	2SC633A	C109, 209	1-121-651-11	10	16V elect		
IC101, 201	Integrated Circuit	TA7122AP	C110, 210	1-121-422-11	220	25V elect		
D101, 201	Diode	VO-6C	C111, 211	1-131-212-11	0.33	35V tantalum		
D102, 202	Diode	1T-40	C112, 212	1-107-085-11	100 p	50V silvered mica		
D103, 203	Diode	1T-22	C113, 213	1-121-402-11	33	10V elect		
D104, 204	Diode	1T-40	C114, 214	1-107-127-11	68p	50V silvered mica		
D311, 312	Diode	1T-40	C115, 215					
D314	Diode	SIB01-02						
D315	Diode	SIB01-04						

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>			<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>		
C116, 216	1-121-402-11	33	10V	elect	C164, 264	1-129-701-21	0.01	100V \pm 2% polystyrene	
C117, 217	1-105-510-12	0.0056	50V	mylar	C165, 265	1-129-794-21	0.0033	100V \pm 2% polystyrene	
C118, 218	1-121-392-11	3.3	25V	elect	C312	1-121-395-11	4.7	25V	elect
C119, 219	1-121-398-11	10	25V	elect	C313, 314	1-121-404-11	33	25V	elect
C120, 220	1-121-404-11	33	25V	elect	C319	1-121-412-11	220	200V	elect
C121, 221	1-105-511-12	0.0068	50V	mylar	C331	1-101-006-11	0.04	50V	ceramic
C122, 222	1-107-236-11	560p	50V	silvered mica	C351	1-121-388-11	1000	35V	elect
C123, 223	1-105-507-12	0.0033	50V	mylar	C352	1-127-413-11	1000	50V	solid aluminum
C124, 224	1-121-391-11	1	50V	elect	C353	1-121-411-11	47	50V	elect
C125, 225	1-121-415-11	100	16V	elect	C354	1-127-660-11	2200	16V	solid aluminum
C126, 226	1-121-398-11	10	25V	elect	C355	1-121-450-11	2.2	50V	elect
C127, 227	1-121-391-11	1	50V	elect	C356	1-121-152-11	22	50V	elect
C128, 228	1-121-391-11	1	50V	elect	C357	1-105-710-12	0.0056	100V	mylar
C129, 229	1-121-404-11	33	25V	elect	C358	1-105-715-12	0.015	100V	mylar
C130, 230	1-105-525-12	0.1	50V	mylar	C359	1-131-197-11	3.3	25V	tantalum
C131, 231	1-107-111-11	15 p	50V	silvered mica	C360	1-129-710-11	0.0047	630V	polystyrene
C132, 232	1-105-501-12	0.001	50V	mylar	C361	1-105-680-12	0.039	50V	mylar
C133, 233	1-107-168-11	91 p	50V	silvered mica	C362	1-107-018-11	270 p	500V	silvered mica
C134, 234	1-121-402-11	33	10V	elect	C363	1-105-673-12	0.01	50V	mylar
C135, 235	1-121-413-11	100	6.3V	elect	C364	1-121-738-11	10	50V	elect
C136, 236	1-121-726-11	0.47	50V	elect	C365	1-121-414-11	100	10V	elect
C137, 237	1-121-391-11	1	50V	elect	RESISTORS				
C138, 238	1-107-242-11	390 p	50V	silvered mica	All resistors are $\frac{1}{4}$ W, carbon type and in Ω unless otherwise indicated. (k = 1000)				
C139, 239	1-121-726-11	0.47	50V	elect	R101, 201	1-244-681-11	2.2 k		
C140, 240	1-121-392-11	33	25V	elect	R102, 202	1-242-697-09	10 k	low noise	
C141, 241	1-121-391-11	1	50V	elect	R103, 203	1-242-687-11	3.9 k		
C143, 243	1-105-519-12	0.033	50V	mylar	R104, 204	1-242-729-09	220 k	low noise	
C144, 244	1-105-518-12	0.027	50V	mylar	R105, 205	1-242-721-09	100 k	low noise	
C145, 245	1-105-517-12	0.022	50V	mylar	R106, 206	1-242-687-09	3.9 k	low noise	
C146, 246					R107, 207	1-242-713-11	47 k		
C147, 247	1-141-165-11	150 p		trimmer	R108, 208	1-242-675-11	1.2 k		
C148, 248	1-121-391-11	1	50V	elect	R109, 209	1-242-657-11	220		
C149, 249	1-121-395-11	4.7	25V	elect	R110, 210	1-242-719-09	82 k	low noise	
C150, 250	1-107-111-11	15 p	50V	silvered mica	R111, 211	1-242-709-11	33 k		
C151, 251	1-105-661-12	0.001	50V	mylar	R112, 212	1-242-667-11	560		
C152, 252	1-105-520-12	0.039	50V	mylar	R113, 213	1-242-681-11	2.2 k		
C155, 255	1-121-726-11	1	50V	elect	R114, 214	1-242-723-11	120 k		
C156, 256	1-121-651-11	10	16V	elect	R115, 215	1-221-978-00	4.7 k	adjustable	
C157, 257	1-121-398-11	10	25V	elect	R116, 216	1-242-685-11	3.3 k		
C158, 258	1-105-510-12	0.0056	50V	mylar	R117, 217	1-221-978-00	4.7 k	adjustable	
C159, 259	1-105-669-12	0.0047	50V	mylar	R118, 218	1-222-701-00	10 k		
C160, 260	1-107-103-11	6 p	50V	silvered mica	R119, 219	1-242-673-11	1 k		
C161, 261	1-131-197-61	3.3	16V	tantalum					
C162, 262	1-129-899-11	0.056	100V \pm 2% polystyrene						
C163, 263	1-129-896-21	0.012	100V \pm 2% polystyrene						

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>		<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	
R120, 220	1-242-729-11	220 k		R166, 266	1-242-681-11	2.2 k	
R121, 221	1-242-717-09	68 k	low noise	R167, 267	1-242-665-11	470	
R122, 222	1-242-668-11	620		R168, 268	1-221-978-00	4.7 k, adjustable	
R123, 223	1-242-721-09	100 k	low noise	R169, 269	1-242-647-11	82	
R124, 224	1-242-673-11	1 k		R171, 271	1-242-682-11	2.4 k	
R125, 225	1-242-661-11	330		R172, 272	1-242-641-11	47	
R126, 226	1-242-657-11	220		R173, 273	1-242-694-11	7.5 k	
R127, 227	1-242-685-11	3.3 k		R174, 274	1-242-693-11	6.8 k	
R128, 228	1-242-725-11	150 k		R178, 278	1-242-601-11	1	
R129, 229	1-242-721-11	100 k		R180, 280	1-242-637-11	33	
R130, 230	1-242-729-11	220 k		R181, 281	1-242-641-11	47	
R131, 231	1-242-685-11	3.3 k		R182, 282	1-242-653-11	150	
R132, 232	1-242-673-11	1 k		R183, 283	1-242-681-11	2.2 k	
R133, 233	1-210-871-11	3.6 k	±2%	R184, 284	1-242-695-11	8.2 k	
R134, 234	1-210-871-11	3.6 k	±2%	R186, 286	1-242-705-11	22 k	
R135, 235	1-242-721-11	100 k		R187, 287	1-242-723-11	120 k	
R136, 236	1-210-872-11	3.9 k	±2%	R188, 288	1-242-719-11	82 k	
R137, 237	1-210-870-11	360	±2%	R189, 289	1-242-721-11	100 k	
R138, 238	1-242-667-11	560		R190, 290	1-242-725-11	150 k	
R139, 239	1-242-735-09	390 k	low noise	R191, 291	1-242-727-11	180 k	
R140, 240	1-242-681-11	2.2 k		R192, 292	1-242-737-09	470 k	low noise
R141, 241	1-242-697-11	10 k		R193, 293	1-210-850-11	300	±2%
R142, 242	1-242-697-09	10 k	low noise	R194, 294	1-210-852-11	5.6 k	±2%
R143, 243	1-244-681-11	2.2 k		R195, 295	1-210-853-11	6.2 k	±2%
R144, 244	1-242-685-11	3.3 k		R196, 296	1-210-855-11	33 k	±2%
R145, 245	1-242-695-11	8.2 k		R197, 297	1-242-717-11	68 k	
R146, 246	1-242-699-11	12 k		R198, 298	1-242-737-11	470 k	
R147, 247	1-222-701-00	10 k	adjustable	R199, 299	1-242-691-11	5.6 k	
R148, 248	1-242-701-11	15 k		R151, 251	1-242-673-11	1 k	
R149, 249	1-242-721-09	100 k	low noise	R152, 252	1-242-685-11	3.3 k	
R150, 250	1-242-729-09	220 k	low noise	R153, 253	1-242-719-11	150	
R151, 251	1-242-721-11	100 k		R154, 254	1-242-709-11	75	
R152, 252	1-242-653-11	150		R155, 255	1-242-709-11	56 k	
R153, 253	1-242-695-11	8.2 k		R156, 256	1-242-709-11	33 k	
R154, 254	1-242-699-11	12 k		R157, 257	1-242-709-11	12	2W metal oxide
R155, 255	1-242-707-11	27 k		R158, 258	1-244-719-11	560	
R156, 256	1-242-680-11	2 k		R159, 259	1-244-846-11	75	
R157, 257	1-242-713-11	47 k		R160, 260	1-244-915-11	56 k	
R158, 258	1-244-719-11	82 k		R161, 261	1-244-709-11	33 k	
R159, 259	1-224-433-00	50 k (A), variable; LINE		R162, 262	1-213-133-11	150	metal oxide
R160, 260	1-224-432-00	20 k (A), variable; MIC		R163, 263	1-244-893-11	6.8 k	
R161, 261	1-244-703-11	18 k		R164, 264	1-242-657-11	220	
R162, 262	1-224-431-00	20 k (B), variable; LINE OUT		R165, 265	1-242-709-11	33 k	
R163, 263	1-242-697-11	10 k		R166, 266	1-206-016-11	1 k	2W metal oxide
R164, 264	1-242-733-11	330 k		R167, 267	1-242-681-11	2.2 k	

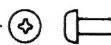
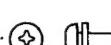


SECTION 7

HARDWARE

<u>Part No.</u>	<u>Description</u>	<u>Part No.</u>	<u>Description</u>
SCREWS			
	All screws are Phillips type (cross recess type) unless otherwise indicated. (-): slotted head.	7-623-108-12	3
7-621-255-13	P 2 x 3	7-623-110-12	4
7-621-255-35	P 2 x 5	7-623-205-22	2 spring
7-621-255-55	P 2 x 8	7-623-207-22	2.6 spring
7-621-259-25	P 2.6 x 4	7-623-208-22	3 spring
7-621-259-35	P 2.6 x 5	7-623-210-22	4 spring
7-621-259-45	P 2.6 x 6	7-623-410-08	4, w/external tooth
7-621-259-55	P 2.6 x 8	RETAINING RINGS	
7-621-281-13	P 2 x 2	7-624-102-01	E 1.5
7-682-124-02	P 2 x 4	7-624-104-01	E 2
7-682-146-01	P 3 x 5	7-624-106-01	E 3
7-682-147-04	P 3 x 6	7-624-108-01	E 4
7-682-148-01	P 3 x 8	MISCELLANEOUS	
7-682-534-04	B 2.6 x 5	7-671-113-01	Steel Ball 3
7-682-646-01	PS 3 x 5	7-683-239-01	SC 3 x 6, w/hexagon socket
7-682-647-04	PS 3 x 6	7-683-247-31	SC 4 x 6, w/hexagon socket
7-682-648-03	PS 3 x 8	7-684-022-00	Nut 2.6
7-682-660-01	PS 4 x 6	7-684-013-00	Nut 3
7-682-663-02	PS 4 x 12	7-684-014-00	Nut 4
7-682-946-01	PSW 3 x 5	7-623-507-11	Lug 2.6
7-682-947-01	PSW 3 x 6	7-623-508-11	Lug 3
WASHERS			
7-623-105-12	2	SC – Set Screw	
7-623-107-02	2.6	E – Retaining Ring (E Washer)	

— Hardware Nomenclature —

P – Pan Head Screw		SC – Set Screw	
PS – Pan Head Screw with Spring Washer		E – Retaining Ring (E Washer)	
K – Flat Countersunk Head Screw		W – Washer	
B – Binding Head Screw		SW – Spring Washer	
RK – Oval Countersunk Head Screw		LW – Lock Washer	
T – Truss Head Screw		N – Nut	
R – Round Head Screw		– Example –	
F – Flat Fillister Head Screw		